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ABSTRACT

This report of a conference on guidance school education contains papers from plenary and concurrent sessions, information on the Council of Graduate Schools' (CGS) business meeting, and on awareds presentations, copies of the CGS constitution and bylaws, and a CGS member institution list. Papers and presenters are as follows: "The Graduate Degree in a College of Dentistry" (William M. Feagans); "The Graduate Degree in Nursing" (Helen K. Grace); "The Graduate Degree in the Allied Health Professions" (Richard Gutekunst); "The View from the Graduate Dean's Perspective" (Lowell Greenbaum); "Assuring Mastery" (Suzanne Reid-Williams); "Minority Students--Master's Programs" (John K. Beadles; Mary Ann Carroll); "CGS Project on the Role and Nature of the Doctoral Dissertation: Progress Report" (Gordon Maclachlan); "The Question of Minority Scholarship" (Joyce Ladner); "The Labor Market Implications of Lengthening Doctorate Completion Time" (Howard Tuckman); "Time to Complete the Doctoral Degree: The Berkeley Experience" (Joseph Duggan); "The Birth of a New Academic Partnership at the Johns Hopkins University Montgomery County Center" (Edgar Roulhac); "University of Maryland at Shady Grove in Montgomery County, Maryland" (Harley A. Cloud); "Teaching Assistant Unions" (Madelyn M. Lochkart); "TA Unionization at the University of British Columbia" (Peter Suedfeld; Catherine Urquhart); "Shaping a Public View of Graduate Education" (Lee Daniels; Anthony Flint); "Students, Scholars and Stress: The Relationship between Graduate Students and Their Programs" (Leonard L. Baird); and "New Developments in the GRE" (Carlotte V. Kuh). (LPT)

Proceedings of the Twenty-Ninth Annual Meeting

COUNCIL OF GRADUATE SCHOOLS

November 28–December 1, 1989
J. W. Marriott Hotel
Washington, D.C.

edited by Edna M. Khalil

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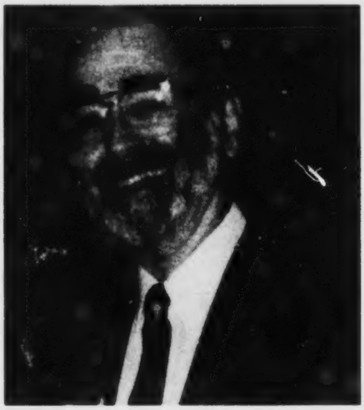

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COUNCIL OF GRADUATE SCHOOLS

29th ANNUAL MEETING

PROGRAM

TUESDAY, NOVEMBER 28, 1989

PRE-MEETING WORKSHOPS

Coordinator of Workshops: Dale R. Comstock, *Dean of Graduate Studies and Research, Central Washington University*

Orientation and Training of Graduate Teaching Assistants

This workshop will explore ways of enhancing the TA experience as graduate schools prepare the future professoriate.

Faculty:

Leo Lambert, Associate Director of the Graduate School/Director, TA Program, Syracuse University, *Presiding*

Jody Nyquist, Director for Instructional Development, Center for Instructional Development and Research, University of Washington

Nancy Chism, Program Director, Faculty and TA Development, The Ohio State University

Automating Graduate Information Systems

This workshop will focus on the automation of information systems in graduate schools, both on a PC-oriented system and a main-frame system.

Faculty:

Anthony Barnard, Dean and Co-Director, Graduate School, University of Alabama at Birmingham, *Presiding*

Margaret W. Masson, Director of Graduate Admissions and Records, Towson State University

Research Administration

This workshop will focus on the research administrator's responsibilities for regulatory compliance on R&D grants and contracts with the university, including animal use, human subjects protection, drug-free workplace, hazardous materials handling, and misconduct in research.

Faculty:

Eric R. Rude, Associate Dean, Graduate School, University of Wisconsin-Madison, *Presiding*

Ronald N. Satz, Dean of Graduate Studies and Director of Research, University of Wisconsin-Eau Claire

PRE-MEETING SATELLITE SESSIONS

I. The Graduate Degree and the Health Care Professional: Definitions, Goals and Directions

Presiding

Karen Hitchcock, Vice Chancellor for Research and Dean of the Graduate College, University of Illinois at Chicago

The Graduate Degree in a College of Dentistry

William M. Feagans, Dean of Dental Medicine, SUNY, Buffalo

The Graduate Degree in Nursing

Helen Grace, W. K. Kellogg Foundation, Battle Creek, Michigan

Presiding

William Berndt, Vice Chancellor for Academic Affairs and Dean for Graduate Studies & Research, University of Nebraska Medical Center

The Graduate Degree in the Allied Health Professions

Richard Gutekunst, Dean of Health Related Professions, University of Florida

The View from the Graduate Dean's Perspective

Lowell Greenbaum, Dean, School of Graduate Studies and Vice President for Research, Medical College of Georgia

II. International Dimensions of Graduate Education

Presiding

Ronald Goldenberg, Dean of Graduate School, Eastern Michigan University

Institutional Exchange Agreements

Chuan Sheng Liu, Chairman, Department of Physics, University of Maryland, College Park

Hector Garza, Associate Dean, Graduate School, Eastern Michigan University

Developing Graduate Programs in Another Country

John H. Yopp, Associate Vice President for Academic Affairs and Research/Dean of Graduate School, Southern Illinois University at Carbondale

Jack Nelson, Associate Vice Provost for Graduate Studies, Temple University

III. Graduate Education in Master's Only Institutions

Presiding

Paul T. Bryant, Dean, Graduate College, Radford University

Assuring Mastery

Suzanne Reid-Williams, Graduate Dean, Western Illinois University

Edward J. Miller, Dean, Graduate School, College of New Rochelle

Minority Students-Master's Programs

John K. Beadles, Dean of Graduate School and Coordinator of Organized Research, Arkansas State University

Mary Ann Carroll, Dean of Graduate Studies and Director of Research, Indiana State University

Ann W. McKinney, Dean of Graduate School, Norfolk State University

WEDNESDAY, NOVEMBER 29, 1989

7:30 a.m.

Breakfast for Assistant and Associate Deans

Sponsored by the Education Resources Institute (TERI) and the Graduate and Professional School Financial Aid Services (GAPSFAS)

9:00 a.m.

Plenary Session I

The Federal Deficit in the 1990s—A Dilemma for Higher Education

Stanley E. Collender, Director of Federal Budget Policy, Price Waterhouse

Presiding

Robert T. Holt, Dean of Graduate School, University of Minnesota

10:45 a.m.–Noon

Concurrent Sessions

1. **CGS Project on the Role and Nature of the Doctoral Dissertation: Progress Report**

Alison P. Casarett, Dean of Graduate School, Cornell University

Roy A. Koenigsknecht, Dean of Graduate School, Ohio State University

Gordon Maclachlan, Dean and Vice Principal (Research), McGill University

Presiding

Russell G. Hamilton, Jr., Dean for Graduate Studies and Research, Vanderbilt University

2. **Graduate Schools as Organizations**

Robert T. Holt, Dean of Graduate School, University of Minnesota

David H. Cohen, Vice President for Research and Dean of Graduate School Northwestern University

John H. D'Arms, Dean of Graduate School, University of Michigan

Presiding

Catherine Lafarge, Dean of the Graduate School of Arts and Sciences, Bryn Mawr College

3. CGS Project on Master's Education: Progress Report

Clifton Conrad, Department of Education Administration, University of Wisconsin-Madison, Project Director

Barbara Solomon, Dean of Graduate Studies, University of Southern California

Presiding

Hazel Garrison, Assistant Vice President for Research and Dean of Graduate College, Hampton University

4. Filling in the Blanks: Two Approaches to Collection and Analysis of Data on Graduate Education

Peter D. Syverson, Director of Information Services, Council of Graduate Schools

Robert Herriott, Director, AAU/AGS Project for Research on Doctoral Education, University of Rochester

Presiding

Larry J. Williams, Dean, Graduate School and Research, Eastern Illinois University

Noon

Luncheon

Speaker

Leonard L. Hayes III, Assistant Secretary for Postsecondary Education, U.S. Department of Education

2:00–3:15 p.m.

Plenary Session II

The Question of Minority Scholarship

Joyce Ladner, Professor, School of Social Work, Howard University

Alex Saragoza, Associate Professor of Chicano Studies, University of California, Berkeley

Presiding

Karen Y. Williams, Dean in Residence, Council of Graduate Schools

3:45–5:00 p.m.

Concurrent Sessions

5. A Prelude to Reauthorization

Thomas J. Linney, Jr., Director of Government and Association Relations, Council of Graduate Schools

Presiding

Patricia A. McWade, Dean in Residence, Council of Graduate Schools

6. On Time to the Doctorate

Howard Tuckman, Distinguished Professor of Economics, Memphis State University

Joseph Duggan, Associate Dean, Graduate Division, University of California, Berkeley

Presiding

Gene L. Woodruff, Vice Provost for Research and Dean of Graduate School, University of Washington

7. New Partnerships: Graduate Education and Economic Development in Montgomery County, Maryland

Robert G. Snyder, Government-Business-Academia Coordinator, Montgomery County Government

Edgar Roulhac, Assistant Provost, The Johns Hopkins University, and Director, The John Hopkins Montgomery County Center

Harley Cloud, Director of Academic Programs, University of Maryland at Shady Grove

Presiding

Joyce V. Lawrence, Dean of Graduate Studies and Research, Appalachian State University

8. Teaching Assistant Unions

Madelyn M. Lockhart, Dean of Graduate School and Dean of International Students, University of Florida

Peter Suedfeld, Dean of Graduate Studies, University of British Columbia

Catherine Urquhart, Graduate Student, University of Florida

Presiding

C. W. Minkel, Vice Provost and Dean of Graduate School, University of Tennessee at Knoxville

5:30–6:30 p.m.

Deans in Residence Reception

This reception, hosted by current and former deans in residence, is intended to provide an opportunity for potential dean in residence candidates to find out more about the position from those who have served at CGS.

THURSDAY, NOVEMBER 30, 1989

9:00–10:15 a.m.

Plenary Session III

Shaping a Public View of Graduate Education

Lee Daniels, New York Times

Karen Winkler, Chronicle of Higher Education

Anthony Flint, Boston Globe

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Proceedings of the Twenty-Ninth Annual Meeting

COUNCIL OF GRADUATE SCHOOLS

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November 28–December 1, 1989
J. W. Marriott Hotel
Washington, D.C.

10:15 a.m.–Noon

Business Meeting

President's Report

Jules B. LaPidus, President, Council of Graduate Schools

Chairman's Report

Robert T. Holt, Dean of Graduate School, University of Minnesota

Other Business

Presiding

Robert T. Holt, Dean of Graduate School, University of Minnesota, and Chairman of the Board of Directors, Council of Graduate Schools

Noon

Luncheon

Presentation of Awards

Gustave O. Arlt Award in the Humanities

Presented by Catherine Lafarge, Chairman of the Arlt Award Committee and Dean of the Graduate School of Arts and Sciences, Bryn Mawr College

CGS/University Microfilms International Distinguished Dissertation Award

Presented by William H. Matchett, Chairman of the CGS/UMI Award Committee, and Dean of Graduate School, New Mexico State University

2:00–3:15 p.m.

Plenary Session IV

The Climate for Graduate Education: Conflict of Interest and Interest in Conflict

Leonard L. Baird, Professor, Department of Educational Policy Studies and Evaluation, University of Kentucky

Michael Gluck, Senior Analyst, Office of Technology Assessment, U.S. Congress

Presiding

Jeanne Gullahorn, Vice President for Research and Dean of Graduate Studies, SUNY-Albany

3:30–4:15 p.m.

Nuts and Bolts Sessions

A. **Foreign Students**
   Karlene N. Dickey, Associate Dean, Graduate School, Stanford University

B. **CASPAR Demonstration: A New Tool for Access to NSF Statistical Databases**
   Mary Golliday, Study Director, National Science Foundation
   James W. Firnberg, NSF Consultant
   Fabrizio Golino, Quantum Research Corporation

C. **Microcomputers and Information Systems**

Peter D. Syverson, Director of Information Services, Council of Graduate Schools

Ellen Benkin, Director, Graduate Institutional Research, University of California, Los Angeles

William Ray, Assistant Dean, Graduate School, University of Oklahoma

D. **Minority Programs and Recruitment**

Trevor L. Chandler, Associate Dean, Graduate School, University of Washington

Karen Y. Williams, Dean in Residence, Council of Graduate Schools

4:30–5:15 p.m.
Nuts and Bolts Sessions
A, B, C, D listed above repeated at this time.

FRIDAY, DECEMBER 1, 1989

9:00 a.m.–Noon
Plenary Session V
New Approaches to the GRE
Charlotte Kuh, Executive Director, Graduate Record Examinations Program

Panel of Graduate Deans:
Wilson G. Bradshaw, Dean, Graduate Studies, Florida Atlantic University
Patricia B. Swan, Vice Provost and Dean, Graduate School, Iowa State University
Mary G. Powers, Dean, GSAS & Arts & Science Faculty, Fordham University
John K. Yost, Vice Chancellor for Research and Dean of Graduate Studies, University of Nebraska-Lincoln

Presiding
Richard Attiyeh, Dean of Graduate Studies & Research, University of California, San Diego

Noon
Adjournment

Pre-Meeting Satellite Sessions

Tuesday, November 28, 1989

I. THE GRADUATE DEGREE AND THE HEALTH CARE PROFESSIONAL: DEFINITIONS, GOALS AND NEW DIRECTIONS

Presiding: Karen Hitchcock, *Vice Chancellor for Research and Dean of the Graduate College, University of Illinois at Chicago*
Speakers: William M. Feagans, *Dean of Dental Medicine, SUNY, Buffalo*
Helen K. Grace, *W.K. Kellogg Foundtion, Battle Creek, Michigan*

The Graduate Degree in a College of Dentistry

William M. Feagans

I am happy to be here with you today and to bring to you some of the experiences we have had with graduate education at Buffalo. I would like to start by giving you a brief history of the beginnings of graduate education in dentistry.

Perhaps one of the first efforts to instill graduate education in colleges of dentistry was the program begun by Dr. Whipple at the University of Rochester, School of Medicine and Dentistry. The objectives of this program, funded by the Rockefeller Foundation, were: "1) to support dental research and 2) to train teachers, investigators and practitioners in the fundamental biological background underlying the problems of dental health."[1] The Rochester Dental Fellowship Program was begun in 1930. The dental fellows, such as Basil Bibby and others, were placed in the existing departments of the basic medical sciences and were introduced to research methodology. This group of fellows essentially pursued a graduate program by being placed in an environment of scholarly endeavors. The first group to complete this course of study was available in the mid '30s and early '40s to take positions of research leadership in dental colleges. Much to their surprise, these dental scholars found no market for their unusual skills as the dental colleges were more interested in hiring part-time clinicians. The program at Rochester is still in existence and continues to accept D.D.S. candidates for admission to their graduate program.

Now—let's move down the road about 75 miles to Buffalo. The School of Dental Medicine, University at Buffalo, was founded in 1892 as a Department of Dentistry and was charged to be "established upon the same terms and conditions that apply to other departments of the University. The Department will belong to the University and every dollar contributed to its equipment will be vested in the Council; hence there will be no private ownership, nor can the policy of the school be so controlled by the dental faculty as to put it out of harmony with the other departments of the University."

As a department of the university, the School was expected to pursue the goals of any university discipline, namely those of education, research and service. A department in a university, at least in my opinion, should represent the principal division of interest within a group of scholars. At that time, to comply with the charge was not an easy task for the faculty since the organization and appropriation of funds did not follow the typical university departmental allocations. In the early years, there *was* no full-time faculty, and clinical teaching was provided by a dedicated cadre of regional practitioners who shared freely of their time and knowledge. As unpaid part-time faculty, clinical teachers were exempt from pursuing scholarly activities and were expected only to supervise the treatment of institutional patients. Most of the revenue for the operation of the department was generated through patient fees.

It was not until 1960 when James A. English was appointed as its Dean and first full-time faculty member, that the School was able to achieve the expected objectives of a university department. We were fortunate, indeed, to have had Dr. English at that point in time. He brought to the program a new research concept and dimension not previously envisioned. During his tenure, from 1960 to 1970, Dr. English developed a faculty to whom the challenge of scientific research was balanced against the need for continued clinical excellence, and it was through his leadership that preventive dentistry became the focus of this faculty. By its very nature, preventive dentistry, as well as preventive medicine, is an interdisciplinary program. The first key to prevention was understanding the cause of dental disease, in other words, research involving many different disciplines. In 1962, Dr. Arthur Ellison was appointed chairman of a newly-organized academic discipline within the university—the Department of Oral Biology. The major function of this department was, and still is, a commitment to research, to graduate education, and to the encouragement of students and faculty at all levels to pursue these scholarly endeavors in order to maintain the link between clinical education and research. This function required creating an environment in which to develop and strengthen research at the forefront of biomedical science, specifically in the causes, prevention and treatment of major oral diseases.

Another important component of the preventive thrust as envisioned by Jim English was education. We are speaking of education at all levels, from enlightening the family to proper home care to graduating the professional practitioner. It would require changing human behavioral patterns relative to the prevention of dental caries and periodontal diseases. The student would have to be taught to cope with apathy among patients, their lack of motivation, their phobias and their lack of knowledge in preventing the prevalent diseases of the oral cavity. In 1965, Dean English appointed Dr. Grant T. Phipps as the chair of the Department of Behavioral Sciences to accomplish these professional and graduate teaching objectives.

Since its creation, the Department of Behavioral Sciences has made significant contributions to our professional curriculum and has pursued active research programs in the psychological components of temporomandibular joint disorders. In fact, it now has a clinical operation which provides diagnosis and treatment of this baffling syndrome. Other activities within the department include investigations in dental patient anxiety, orofacial esthetics and dental phobics. Graduate education in the department has taken a route other than that pursued by the Department of Oral Biology. A research program has been developed by working with various departments that have well-established graduate programs, such as the Department of Psychology or the Department of Educational Psychology. Over half of the faculty in the Department of Behavioral Sciences have joint appointments in the sponsoring graduate department. Students wishing to pursue graduate education in the Department of Behavioral Sciences must obviously be accepted by the sponsoring graduate department in the university.

These two new concepts, developed in the middle '60s, were the vision of tomorrow as it then related to dental education, research and the graduate degree in a college of dentistry. The establishment of oral biology and behavioral sciences as academic disciplines in our university has been very successful and, in my judgment, should serve as a model for other schools to emulate. A number of dental clinicians have gone through these programs as graduate students.

With renewed emphasis on the development of research, graduate opportunities were created within the School of Dental Medicine. Master's degrees with majors in biomaterials, orthodontics or oral sciences and a Ph.D. with a major in oral biology are now offered by the School. The first department of oral biology in the country, the one in Buffalo, was also the first to establish a doctoral program with a major in oral biology. Several years ago, the faculty in the department celebrated their 20th year by having their Ph.D. graduates return for a two-day scientific program. Twenty graduates attended and all were members of a university faculty or an institute scientific staff.

Most dental schools offer advanced dental education programs in the various specialities of dentistry. Our faculty provide advanced clinical training in endodontics, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics and prosthodontics. In recent years, the thrust of many of these certificate programs has been to prepare future academicians in the various specialities by providing exposure to research methodology. In the early 1970s, Dr. Robert Genco, our present professor and chair of the Department of Oral Biology, was awarded a training grant coupling the certificate training program in periodontics with a Ph.D. program. This has served as a prototypical program for many schools with some of our specialty students pursuing their courses of advanced clinical training with the Ph.D. education. Dental education must be dynamic and changing and should constantly reach out to shape the future. The creation of the Departments of Oral Biology and Behavioral Sciences has certainly played a vital role in determining the direction of the School of Dental Medicine at Buffalo. It is through the efforts of these departments—particularly Oral Biology, that our School has been able to create a distingished research environment from which many grant applications have emanated and been funded by the National Institute of Dental Research. Discussions with the chair and faculty of the department indicated that candidates in the training grant program are strongly encouraged to write R29 grant proposals in years four and five of their period of study. This, coupled with the strong mentor/colleague relationship, certainly has provided candidates with a background to compete successfully for R01 awards.

Several years ago, the School of Dental Medicine recharted the academic direction of the Department of Dental Materials. The primary mission of the department beyond the professional curriculum in dental materials was to enlarge the scope of the development of biomaterials whose uses apply primarily to dentistry as well as to medicine. This includes the characterization, clinical and laboratory testing, and evaluation of materials with an emphasis on biomaterials research common to the science of synthetic replacement of hard and soft tissue structures of the human body.

The name of the department has been changed to that of the Department of Biomaterials, enlarging its scope to bring together many university disciplines. This is a multidisciplinary effort incorporating the disciplines of dentistry, medicine, physics, engineering, chemistry, biophysics, etc., with the full support of the appropriate administrative officers. The graduate student will be "encouraged by his environment to bring other disciplines to bear on his work and to explore the implications of his results for other disciplines."[2]

Dental schools should take a hard look at their professional curricula and the role of the faculty in graduate education. Each school should have an environment conducive to research activities and that means space, equipment and most importantly, faculty members who can interact scientifically with other faculty in the university. The organizational structure of the school should foster and encourage a free interchange of ideas and new knowledge between their faculty and others within the university. If this environment does not exist, it is then necessary to develop a formalized collaborative research effort with other colleges within the university—engineering, medicine, pharmacy, etc. After an agreement of a joint venture, the dental school should supply the resources to support the activities in department X of a senior scientist who would periodically apprise the dental dean of the search process. It is important that the dean leave the final selection of the new faculty member to the chair. Ideally, one is looking for an individual with an R01 award who would move the award with him or her.

The advantages of a formalized collaborative research effort are obvious to a college of dentistry trying to promote graduate education. First, it provides the college with a research nucleus which could seed other research endeavors of the faculty. Second, it should provide a site for the involvement of students in research programs at both the pre- and post-doctoral level. Third, with time, it could be an educational locus for the training and education of the D.D.S./Ph.D. and professional Ph.D. students. Initially, this would be an involvement of an extremely small number of people. It would be expected that the senior investigator would offset some of his/her salary to provide release time for interested members of the existing faculty. This, in a very small way, should facilitate the transfer of information from the research laboratory to the clinical setting and should promote faculty experience in research methodology.

Research strides made over the last two decades will decelerate appreciably unless we are able to transfer new knowledge and technology from the laboratory to the clinical setting. Accomplishing the shift to greater clinical research activity will serve the profession well over the long term since it requires the production of clinician/scientists and the transfer of knowledge acquired in the research laboratory to the professional curriculum and into practice. If the chasm between clinicians and research scientists is allowed to continue unimpeded, we will be unable to effect the changes required for the growth and vitality of the profession. As Dr. Bawden stated in his guest editorial in the October '87 issue of the Journal of Dental Research, "Very few dental school departments have faculty who are scientists of sufficient quality to train the clinician/scientists who will successfully serve the needs of dental education in the future. Research training most often must be accomplished in departments outside the dental school." He continues, "Unless patterns of graduate training are substantially changed, the situation can only get worse."[3]

In the brief time that I have had with you with this morning, I have tried to share my thoughts on graduate education and research as they related to one health professional college. In my judgment, the faculty of our School realize the importance of their commitment to research and graduate education. Based upon our experiences, I feel that with careful planning and patience, each school or college must be willing to make a long-term commitment to the acquisisiton and continuous support of quality scientists. It is through the support of outstanding scientists with solid research programs that a quality graduate program can be developed.

I have given you several examples of how a dental college can participate in a graduate education program for the improvement of the professional curriculum. The commitment can be an enormous task requiring mutual cooperation and understanding. As we look forward to the 21st century, the handwriting is on the wall; the choices are clear.

REFERENCES

[1] William D. McHugh, "Where's the Dental School?", To Each His Farthest Star—University of Rochester Medical Center, pp. 162–179.

[2] Robert Sproull and Harold Hall, "Multidisciplinary Research and Education Programs in Universities: Making Them Work." Government University Industry Research Roundtable.

[2] James W. Bawden (1987): Guest Editorial: "Clinician-Scientists Needed", J Dent Res 66:1612.

The Graduate Degree in Nursing

Helen K. Grace

Reproduced by permission from McCloskey, Joanne Comi, and Grace, Helen Kennedy, editors: Current issues in nursing, ed. 3, St. Louis, 1990, The C. V. Mosby Co.

During the last decade there has been a dramatic increase in the number of doctoral programs in nursing and an accompanying increase in the number of doctorally prepared nurses. Given this increase, are the types of doctoral programs available to nurses sufficiently diverse to address the needs of a practice-based profession? This chapter first provides a brief summary of the development of doctoral education within nursing. With this as a framework, the question of "doctoral preparation for what?" is posed. Arguing that nurses with doctoral preparation are needed in a variety of leadership roles within the profession, the case for a variety of program models for doctoral education is made.

Development of Doctoral Education in Nursing

Although a few nurses earned doctoral degrees (mainly in education) early in the twentieth century, modern doctoral education in the United States is now some 25 years old. The number of doctoral programs in nursing has grown dramatically in the 1970s and 1980s, with approximately 40 programs now in place. Given this stage of development, it is appropriate that this be a time for taking stock and setting future directions.

To understand current patterns of doctoral education it is useful to review the progression of nurses into doctoral study both in and out of nursing. Nurses earned their first doctoral degrees primarily in schools of education, an environment receptive to a practice discipline. The focus of doctoral study was on methods of teaching rather than on the substantive content of the field of nursing. These programs focused on such things as teaching and learning theories, curriculum construction, instructional methodology, and evaluation. Research as part of the educational doctorate was focused on education issues and not on building a knowledge base for the field of nursing.

Following World War II, with impetus from the GI bill, many nurses entered institutions of higher education for academic preparation in nursing. A number subsequently entered graduate study in a variety of fields. This trend was accelerated by the Nurse Scientist program, which provided scholarships for nurses to study in a variety of fields. With support from this source a number of nurses studied in the natural and behavioral sciences, joining those who had earlier completed doctoral study in the educational fields. These nurse-scientists were trained in the research traditions of the behavioral and natural sciences. On completing their doctoral studies they became faculty members within schools of nursing.

This corps of faculty became the designers of doctoral programs in nursing and the researchers and faculty for these programs. As doctoral programs began to evolve, one of the difficulties encountered was reaching agreement on their substantive content. The nursing leadership, the deans and directors of programs, was primarily prepared at the doctoral level in the field of education. The newly graduated nurse-scientists came into schools of nursing with built-in traditions and biases from their different scientific disciplines. For example, those coming from the natural sciences had been trained in a research-mentorship process where research is learned through doing. Those trained in behavioral science fields were familiar with mastering a body of theoretical knowledge, learning research methodology and statistics, and then conducting their own independent research under guidance from a faculty researcher. Faculty coming from diverse orientations toward doctoral study brought these perspectives to the dialog about the content and structure of doctoral education in nursing.

At the same time as the nurse-scientist approach was fueled by federal funding, support for specialization in psychiatric nursing at the graduate level was accelerating preparation of nurses in this clinical specialty area. Based on the national concern for mental health as a priority, graduate programs were developing in schools of nursing throughout the United States. As a natural part of this development, a clinical specialty doctoral program in psychiatric nursing developed at Boston University. Although this program is no longer operational, it is important to note that in the late 1960s and early 1970s there were three distinct program models for doctoral education in nursing: (1) the older functional specialty model for preparation in nursing education and administration, (2) the research model emerging out of the nurse-scientist perspective, and (3) the clinical specialty professional doctorate.

As doctoral programs in nursing proliferated in the 1970s and early 1980s, there was a trend toward increasing similarities in their structure and content. A theory strand, a research component, and an integrative science piece were common across programs. Most doctoral programs built on clinical specialization achieved at the master's level. In contrast to other scientific disciplines where the progression is from the most general knowledge base at the baccalaureate level to increasing specialization throughout graduate study, the pattern in nursing was to be prepared as a generalist at the basic level, to become highly specialized in a clinical specialty area at the master's level, and then to move once more to a general perspective at the beginning stages of doctoral study before research specialization. As a result of this pattern doctoral programs, as with all nursing education, became loaded with course requirements in the attempt to build a common knowledge base for the profession as a whole. Integrating the diverse perspectives from the natural and behavioral sciences into the format of doctoral programs in nursing resulted in a large number of broadly based overview courses as prerequisites for pursuing research at the doctoral level. The intent was for nurse-scientists to integrate these diverse perspectives into a common understanding of nursing.

A second characteristic of doctoral programs in nursing was that all were cast in the mold of the research doctorate, although some may have granted the Doctorate of Science in Nursing (D.Sc.N.) degree. The earlier patterns of a clinical doctorate and specialization in the functional areas of administration and education became less visible as the new programs developed in the research mold. Although the overall pattern was that of the research doctorate, faculty members were involved to varying degrees in conducting their own research. A model of research supervision was carried over from master's programs in nursing. In this model, the small number of faculty with research preparation supervised large numbers of students conducting research on a wide range of topics. Frequently the heavy load of thesis advising absorbed most of the faculty members' time, and they themselves did very little research. This research-advising model conflicted with what many of the nurse-scientists had experienced in their own doctoral study, where they had worked in direct collaborative relationships with their faculty mentors.

Current Status

What is the net result of these trends? The numbers of doctoral programs have increased dramatically over the past ten years. These programs enroll large numbers of students who are instructed by small numbers of faculty with varying degrees of research productivity. The graduates of these doctoral programs in nursing are becoming faculty of schools of nursing throughout the country. Many of these newly graduated doctorally prepared nurses, knowledgeable of the requirements for promotion and tenure and critical of their mentors, are setting their own research as a top priority, with clinical teaching, administration, and public service as much lower priorities. These doctorally prepared nurses are entering faculty positions at a time of declining undergraduate enrollments and a resurgence of concern within the university for the quality of undergraduate teaching. Second, schools of nursing throughout the country are expressing growing concern about the separation between education and practice. As a result of these factors, increased concern is being voiced over the growing separation of research from other aspects of the faculty role such as teaching, practice, and service. Another concern is for the quality of leadership, both in nursing practice and in nursing education.

Doctoral Preparation for What?

Some would argue that a strong research doctorate in nursing is appropriate preparation as a base for all advanced nursing roles: educator, administrator, clinical practitioner, and researcher. Others take the position that preparation in research is not necessarily appropriate for some leadership roles in nursing and that the diversified nature of a practice discipline requires diversity of advanced preparation.

Drawing from experiences in other practice disciplines such as psychology and education, research indicates that there are characteristic personality differences between those students who do well in a research track and those who are expert practitioners. Clinicians demonstrate integrative and holistic thinking patterns, while researchers tend to be reductionist in their thought processes. Although both patterns of thinking are highly valued in the fields, it is accepted that different individuals are more appropriately placed in one track over another. Rarely does an individual attempt to master both basic research and practice. It is acknowledged that the field of psychology needs both experimental and clinical psychologists and that the experimental psychologist needs a beginning understanding of principles of treatment, and vice versa. However, in nursing we tend to adopt the position that one person should be able to be all things, and thus the doctorally prepared nurse should be both a skilled basic researcher and also an able practitioner.

Given the state of development of doctoral education and the diversity of leadership needs in the field of nursing, this may be an appropriate time to examine the question of whether or not there should be diverse options available to nurses wishing to pursue doctoral study. Before considering what these options might be it is important to delineate the varying roles that doctorally prepared nursing faculty now fill in this country.

In addition to nurse researchers, nursing needs administrators both in education and in practice, faculty in clinical nursing as well as in supportive areas, expert clinicians, and even some nurse public policy experts and politicians. Is a generalized nurse doctorate appropriate for all? Although I would argue that all need a grounding in nursing practice, and a base for understanding and conducting research, particularly of an applied nature, they also need substantive knowledge in fields supportive of their particular career interests. For example, preparation for administrative roles requires an understanding of organizational theory, the dynamics of small groups, and principles of management. Research conducted as part of such a degree program logically would focus on an administrative problem and would most likely be applied research. An important component of such a program would be an internship with a nursing administrator in service or in education.

In a previous article I have argued for a dual-track approach to the preparation of nursing faculty. Because faculty roles differ according to the level of nursing education, the college or university in which the program is lodged, and the relationship of the educational program to the practice setting, the preparation of someone teaching fundamentals of nursing to undergraduate students needs to be substantively different than for a faculty member teaching research to doctoral students. Both need a general knowledge of nursing, but the clinical faculty member needs to be an expert practitioner, teacher, and applied researcher. On the other hand, the doctoral-level faculty member must be engaged in on-going research and have a depth of knowledge about a particular area of research emphasis.

In addition to the preparation of nurse researchers, administrators, and teachers, the field requires expert practioners, clinical researchers, public policy experts, ethicists, historians, and humanists. Are all to be prepared at the advanced level in doctoral programs cast in the mold of the research doctorate?

Proposed Models for Doctoral Education

In addressing the diverse needs of the field, three models of doctoral education are needed: (1) the research doctorate, (2) the clinical or applied research doctorate, and (3) the professional doctorate.

The research doctorate

Currently our doctoral programs are a hodgepodge, trying to be all things to all people. While some grant the Ph.D. degree and others the D.N.Sc., the basic structure of all programs is amazingly similar. In the initial stages of doctoral-program development, with faculty resources limited, doctoral programs emphasized independent research to varying degrees. Many became highly structured in course content, limiting the extent of research involvement to the final year of study and leaving the design of research largely up to the student. The rigor of research programs varied widely and was largely dependent on the faculty resources at a particular institution. The end result is a wide range in the quality of the research preparation of individuals completing doctoral study.

Given this state of affairs, it is important that the quality of the research doctorate be given attention. The emphasis within such programs needs to be on developing the thought patterns and discipline of nurse researchers whose primary focus is on building a knowledge base for nursing. To prepare competent researchers, research doctoral programs need to be constructed as total programs that build from the generalist level of basic nursing education to the degree of specialization necessary to add to the discipline's knowledge base. A quality research doctorate should be structured as a total graduate program and need not build on a base of clinical practice specialization, as is currently the design. The research skills of those few who are building a research and teaching career in nursing need to be carefully honed and developed if the knowledge base underpinning practice is to be systematically constructed. Research preparation cannot be tacked on as an afterthought following six years or more of clinical education.

The focus of the research doctorate should be on research and should be built around research-producing faculty who mentor students in their particular areas. Research doctoral programs should carefully limit the number of students admitted to study to ensure that all students will have the opportunity to become competent beginning researchers and to continue on into productive research and teaching careers. The areas of faculty research expertise should be the bases on which the research doctoral program recruits and selects students. In choosing a particular program a student should be confident that the faculty's expertise and ongoing research projects will allow them to develop their own particular research skills and interests.

The clinical or applied doctorate

In contrast to the research doctorate, the clinical or applied doctoral program should build on a clinical specialization base with the primary goal of preparing advanced practitioners and applied researchers. Such programs would prepare not only clinicians but also specialists in the functional areas of administration and teaching, as well as clinical researchers, clinical teachers, public policy analysts and nurse politicians. Within these programs there would be substantive content tracks that provide opportunities for nurses opting for specific career goals to develop the knowledge base that is as necessary to these applied fields as research is to the nurse researcher. Research within these programs would be applied to specific phenomena, such as evaluation research. An example of the type of research conducted might be to test out a model of nursing intervention to address problems of infant mortality in a high-risk population. Research would address the context in which the intervention is undertaken, the process of initiating the intervention and getting mothers engaged in prenatal care, and also the outcome of the intervention. The cost-benefit ratio of a nursing intervention would be an important component of such studies.

A part of doctoral study in a clinical or applied research doctorate program would be an internship with a senior role model in a particular specialty area. Those embarking on an educational or administrative career track, for example, would intern with a dean or department head.

In considering the potential roles of doctorally prepared nurses and the needs of a practice discipline such as nursing, perhaps 10 times as many nurses need preparation in a clinical or applied model as need training in the research model. With both types of preparation mixed in our current models, it is likely that the preparation is inadequate for both tracks.

What of the argument that the research degree is more prestigious than the applied degree and thus is valued more in the marketplace? In this discussion, I have deliberately avoided titling the degrees, because the Ph.D. is traditionally perceived as more prestigious than the D.N.Sc. I would question the validity of the marketplace argument in the first place. Who establishes the marketplace for nursing? Is not the marketplace to be determined by the need for nurses with diverse preparation rather than on the particular label the individual bears? Is the prestige associated with a particular label more important than what the individual is prepared to do? A number of fields have clearly differentiated research and applied doctoral tracks. In some instances both tracks are awarded the same degree; in others, the degree itself differs. The degree offered is not as important as what it is that a particular pathway is designed to accomplish. If nursing is clear about the focus of differing career pathways and what particular educational programs are designed to prepare, the marketplace of employment can also be designed to appropriately recognize, utilize, and remunerate those who enter such career pathways.

The professional doctorate

Although some would not include the professional doctorate in this discussion, if we are looking to the future it needs to be given consideration. The professional doctorate is currently offered by several programs throughout the country as a post-baccalaureate, first professional degree in nursing. Some may argue that this is the appropriate model for preparation of the professional nurse, and that in practice such a professional would work with nurses prepared as technicians to deliver high-quality nursing care. Having achieved a professional doctorate the nurse wishing to build a research career or an advanced clinical or applied research career would enter the appropriate post-basic program, much as a medical doctor might enter a Ph.D. or D.P.H. program for advanced preparation.

Building on the general educational background of the baccalaureate program, a professional doctorate program would provide in-depth education in the clinical practice knowledge and skills essential to professional practice in the complex world of health service delivery.

Summary

I have traced some of the evolutionary threads that have contributed to current patterns in doctoral education in nursing. Although current programs may differ in the title of the degree offered, all are structured as research doctoral programs. Because they try to be all things to all people, they fail in preparing either competent researchers or applied practitioners. Cluttered with too much general content and lacking sufficient content specific to a student's particular career track, these programs fail to provide an adequate foundation for future career pathways. As a result, preparation is limited for academic and administrative leadership roles, clinical teachers, practitioners, and researchers.

Nursing has a vital contribution to make to the health of the American people. To make it we need to ensure that our researchers are providing a substantive knowledge base for the field, that our leaders in academic and practice fields have a solid knowledge base of nursing coupled with administrative preparation and applied research skills, and that our clinical teachers and practitioners are skilled in their clinical specialties and in applied research in their fields. Finally, we need expert practitioners who deliver and manage truly comprehensive, quality health care services for people in all stages of the health-illness continuum.

I. THE GRADUATE DEGREE AND THE HEALTH CARE PROFESSIONAL (contd.)

Presiding: William Berndt, *Vice Chancellor for Academic Affairs and Dean for Graduate Studies and Research, University of Nebraska Medical Center*
Speakers: Richard Gutekunst, *Dean of Health Related Professions, University of Florida*
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The Graduate Degree in the Allied Health Professions

Richard Gutekunst

Prior to discussing graduate education in the allied health professions, it is important to review the current academic status of these programs in this country. In so doing, one notes the following:

1. Programs are offered at vocational education centers, 2-year and 4-year colleges and schools, research institutions and hospitals. In fact, the majority of students enrolled in allied health education programs are enrolled in programs offered in vocational education centers, community colleges and hospitals. Thus, a minority of students are receiving degrees in academic environments which either support or encourage graduate education and research.
2. In some cases it is difficult to determine which 4-year colleges and schools offer allied health education programs since no formal academic administrative unit can be identified, and the programs are "hidden" within biological science departments.
3. Allied health education programs have historically concentrated mainly on graduating competent practitioners.
4. Selection of faculty has often been largely from the practitioner ranks or from individuals who acquired graduate degrees in disciplines not usually associated with research.
5. Deans and other academic administrators interested in stressing research have a tendency to emphasize research in "allied health." Since, however, "allied health" is really a grouping of health professions, it is difficult to envision doing research in this area. Instead, research should be conducted in those specific disciplines comprising or related to the allied health professions (i.e. physical therapy, occupational therapy, health services administration).

Within the past two years there has been an increased interest in research by allied health faculty and this paper summarizes the findings of several reports which have been published dealing specifically with this issue.

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TABLE 1

Demographic Characteristics of Faculty Respondents

Characteristic	Frequency	Percent of Total
Education Level Attained (N = 2162)		
Bachelor's Degree	583	26.7
Master's Degree	1020	46.7
Doctorate	559	25.6
Rank (N = 2143)		
Instructor	669	32.2
Assistant Professor	664	30.6
Associate Professor	395	18.2
Professor	206	9.5
Other	209	9.6
Tenure Status (N = 2165)		
Tenured	715	33.0
Non-tenured, pursuing tenure	612	28.3
Tenure does not apply	838	38.7
Institution Type (N = 2174)		
Major Research University	704	32.7
Other		
Hospital Programs	240	11.0
2-year Community College	395	18.2
4-year Liberal Arts	411	18.9
4-year Professional	397	18.3
Years in Faculty Position (N = 2167)		
0–3	554	25.6
4–7	609	28.1
≥8	1004	46.3

SOURCE: Flanigan, K. S. *et al.* Research productivity profile of allied health faculty. *J. Allied Health* 1988; 17(2): 87–100.

In 1988, Flanegan et al. published a report which summarized the research productivity, profile of faculty teaching in allied health education programs[1]. Inquiries were mailed to 2,034 directors of allied health education programs requesting information about their programs and the identification of faculty members who would agree to participate in the survey. Of this number 1,131 (56%) responded, listing the names of 4,860 faculty members who agreed initially to participate. Questionnaires were mailed to these faculty members and 2,187 (41%) responded.

In this study, research productivity was measured by the following factors:

a. Number of major research presentations.

b. Number of research publications.

c. Number of times an individual served as a principal investigator on a research project.
d. Time devoted per week to research.

These measures of productivity were evaluated and compared against a) faculty rank, b) type of institution, c) earned degree and d) tenure status.

The demographic characteristics of the study population are noted in Table 1.

Table 2 is a listing of the programs and individuals surveyed by profession. Faculty members in Occupational Therapy, Physical Therapy, Medical Records Administration, Medical Technology and Nurse Anesthesia programs had the highest response rates.

Data for research productivity as reflected in time to devote to research and number of research publications are shown in Tables 3 and 4.

As noted in Table 3, 41% of Assistant Professors, 45% of Associate Professors and 53% of Professors responding to the questionnaire indicated they spent 5 or more hours per week on research. Instructors indicated that they spent very little time on research (82.9% less than 4 hours per week). Faculty from research

TABLE 2

Programs and Individuals Surveyed by Profession

Profession	Programs Contacted (N)	Programs Responding (N)	(%)	Surveys Mailed (N)	Surveys Returned (N)	(%)	Percent of Total (%)
Dietetics	430	173	40	854	354	41	16.19
Medical Record Administration	141	103	73	350	192	55	8.78
Medical Technology	119	78	66	389	166	43	7.59
Nurse Anesthesia	111	71	64	481	188	39	8.60
Occupational Therapy	118	96	81	537	237	44	10.84
Perfusion Technology	27	15	56	63	26	41	1.19
Physical Therapy	104	80	77	593	271	46	12.39
Radiologic Technology	742	377	51	1,119	328	29	15.00
Respiratory Therapy	242	138	57	474	207	44	9.47
Subtotals	2,034	1,131	56	4,860	1,967	41	89.94
Speech Language Pathology/Audiology	69	*	*	*	218	*	9.97
TOTALS	2,103	1,131	56	4,860	2,187	41	100.00

(*Data unavailable)

SOURCE: Flanigan, K. S. *et al.* Research productivity profile of allied health faculty. *J. Allied Health* 1988; 17(2): 87-100.

TABLE 3

Research Time by Rank, Institution, Degree, and Tenure Status

Hours per week	Faculty Rank (a)				Institution (b)		Earned Degree (c)			Tenure Status (d)		
	Instr	Assist Prof	Assoc Prof	Prof	Research	Other	BS	MS	PhD	Tenured	Not Tenured	NA
	(n = 1860)				(n = 2027)		(n = 2041)			(n = 2053)		
0	355* (55.1) +	159 (24.9)	82 (21.8)	37 (18.4)	151 (22.3)	564 (41.8)	312 (58.3)	358 (37.3)	50 (9.2)	176 (25.9)	155 (26.2)	393 (50.9)
1–4	179 (27.8)	214 (33.5)	124 (32.9)	58 (28.9)	190 (28.0)	447 (33.1)	144 (26.9)	341 (35.5)	153 (28.1)	233 (32.8)	180 (30.5)	232 (30.1)
5–8	69 (10.7)	133 (20.8)	77 (20.4)	51 (25.4)	147 (21.7)	198 (14.7)	50 (9.3)	164 (17.1)	135 (24.1)	138 (20.3)	130 (22.0)	81 (10.5)
≥9	41 (6.4)	132 (20.7)	94 (24.9)	55 (27.4)	190 (28.0)	140 (10.4)	29 (5.4)	98 (10.2)	207 (38.0)	143 (21.0)	126 (21.3)	66 (8.5)
($p \leq .0001$)	(x^2 237.75, df 9)				(x^2 151.88, df 3)		(x^2 452, df 6)			(x^2 163.5, df 6)		

* N value
+ Column %

SOURCE: Flanigan, K. S. *et al*. Research productivity profile of allied health faculty. *J. Allied Health* 1988; 17(2): 87–100.

TABLE 4

Research Publications by Rank, Institution, Degree, and Tenure Status (1980–1985)

# of publications	Faculty Rank (a)				Institution (b)		Earned Degree (c)			Tenure Status (d)		
	Instr	Assist Prof	Assoc Prof	Prof	Research	Other	BS	MS	PhD	Tenured	Not Tenured	NA
		(n = 1472)			(n = 1598)			(n = 1617)			(n = 1499)	
0	368* (79.3) +	197 (39.9)	82 (25.4)	38 (21.1)	179 (30.0)	608 (60.7)	313 (88.2)	422 (55.6)	56 (11.4)	188 (33.2)	95 (42.7)	398 (71.1)
1	49 (10.6)	109 (21.6)	60 (18.6)	21 (11.7)	112 (18.8)	142 (14.2)	26 (7.3)	151 (19.9)	78 (15.8)	95 (16.8)	83 (17.1)	76 (13.6)
2	23 (5.0)	54 (10.7)	47 (14.6)	19 (10.6)	61 (10.2)	86 (8.6)	8 (2.3)	83 (10.9)	60 (12.2)	68 (12.0)	45 (9.3)	38 (6.8)
3	6 (1.3)	35 (6.9)	23 (7.1)	19 (10.6)	48 (8.0)	36 (3.6)	14 (1.1)	29 (3.8)	51 (10.3)	40 (7.1)	31 (6.4)	15 (2.7)
≥4	18 (3.9)	110 (21.8)	111 (34.4)	83 (46.1)	197 (33.0)	129 (12.9)	4 (1.1)	74 (9.7)	248 (50.3)	175 (30.9)	119 (24.5)	33 (5.9)
($p \leq .0001$)		(x^2 376.10, df 12)			(x^2 166.02, df 4)			(x^2 672, df 8)			(x^2 203.44, df 8)	

* N value
+ Column %

SOURCE: Flanigan, K. S. *et al.* Research productivity profile of allied health faculty. *J. Allied Health* 1988; 17(2): 87–100.

institutions spent more time on research than did faculty employed at other institutions. Approximately 50% of faculty at research institutions devoted 5 or more hours per week to research compared to only 25.1% of the faculty at all other institutions.

The role of tenure status and earned degree is also readily apparent. Faculty members with doctorate degrees were more likely to do research than those possessing a lower academic degree. Tenured faculty and those seeking tenure reported similar times for research which greatly exceeded the research effort of faculty not on tenure accruing lines.

As noted in Table 4 there was a significant correlation between the number of research publications and faculty rank, institution type, earned degree and tenure status.

In summary, this study demonstrated that:

1. Faculty rank was most highly assocated with the number of research publications and time devoted to research.
2. Research productivity was also significantly related to the type of academic institution.
3. There was a high level of correlation between earned degree and research productivity. Education beyond the professional entry-level degree was directly assocated with a) increased time devoted to research; b) increased number of research publications; c) greater number of research presentations, and d) more activity as a principal investigator.
4. Tenured faculty were the most productive, followed by those pursuing tenure. Faculty not in tenure track positions were the least productive. The greatest association with tenure status was noted with the number of publications, time devoted to research activities per week and the number of research presentations.

Two other studies of interest were published by Kraemer and Lyons[2] and Holcomb and Roush[3]. Both studies dealt with research productivity of allied health faculty in academic health science centers.

In the Kraemer study, surveys were mailed to the deans of 50 colleges of health located in academic health science centers throughout the United States. There were 1,444 surveys mailed and the deans were asked to distribute them to all full-time faculty in specifically targeted allied health fields. Of the surveys, 579 (40%) were returned.

Table 5 is a listing of the faculty respondents by program. Respondents ranged in age from 26 to 71 (mean 42) years of age. Seventy-one percent were female. Fifty-two percent were tenured and 46% held administrative appointments. They had been faculty members for an average of 10 years and had spent an average of 8.5 years at their current institution. Fifty-nine percent had earned the M.S. degree and of this number 42% were at the Assistant Professor level. Thirty-three percent had an earned doctorate, 65% of whom were at either the Associate Professor or Professor level. Ninety percent taught in programs that granted the B.S. degree, and 44% in programs granting the master's degree. Only 10% taught in programs which granted a doctoral degree.

Thirty-four percent of the respondents had not received funding for research in the past two years. Those indicating receipt of external grant support listed the following sources:

a.	Foundations	11%
b.	Industry	9%
c.	Federal government	9%
d.	State government	4%

The percentage of time the faculty devoted to various academic-related activities is shown in Table 6. As noted, 76% spent 8 hours per week or less in

TABLE 5

Research Productivity of Allied Health Faculty in Academic Health Centers

Distribution of Faculty Respondents by Program

Field	Frequency	Percentage
Physical Therapy	135	23.4
Occupational Therapy	100	17.3
Medical Technology	94	16.3
Nutrition/Dietetics	42	7.3
Radiologic Technology	35	6.1
Physician Assistant	30	5.2
Communication Disorders	25	4.3
Medical Records Administration	25	4.3
Respiratory Therapy	22	3.8
Cytotechnology	11	1.9
Other	58	10.1

SOURCE: Kraemer, L. G. and Lyons, K. J. *J. Allied Health* Summer 1989.

TABLE 6

Research Productivity of Allied Health Faculty in Academic Health Centers

Percentage of Faculty Time Spent on Various Academic Activities

	Hours						
Activity	**None**	**1–4**	**5–8**	**9–16**	**17–24**	**25–32**	**33**
Teaching	3.1	29.8	43.1	18.7	4.2	0.9	0.3
Lab/Clinic	16.9	29.2	29.5	16.3	5.8	1.2	1.1
Research	24.4	38.8	16.5	12.5	5.7	1.0	1.0
Service	1.9	32.3	19.9	17.3	11.7	7.9	9.0
Consulting	41.2	49.8	7.2	1.8	0	0	0
Practice	60.0	20.6	9.8	6.1	2.1	0.3	0.3

SOURCE: Kraemer, L. G. and Lyons, K. J. *J. Allied Health* Summer 1989.

TABLE 7

Research Productivity of Allied Health Faculty in Academic Health Centers

Publication Record Based on Percentage of Faculty Respondents

	Number of Publications					
Publications	**None**	**1–2**	**3–4**	**5–9**	**10–15**	**16–27**
Total Publications	28.9	23.0	17.6	13.6	8.4	8.5
Last 2 Years	49.1	31.4	12.4	5.7	1.4	0
Book/Mono	63.4	27.3	5.7	3.6	0	0

SOURCE: Kraemer, L. G. and Lyons, K. J. *J. Allied Health* Summer 1989.

TABLE 8

Number of Authors and Mean Number of Referred Journal Articles By Type of Authorship and Academic Rank

	Total Group	Prof.	Assoc. Prof.	Asst. Prof.	Instr.
Sole or First Author					
No. of authors	431	116	157	133	20
% of Group	55	88	68	46	18
Mean no. of articles per author	7.49	14.38	6.73	3.43	1.60
Contributing Authors					
No. of authors	*365*	*102*	*137*	*106*	*14*
% of Group	*47*	*77*	*60*	*37*	*13*
Mean no. of articles per author	*5.29*	*9.15*	*4.74*	*2.67*	*3.07*

SOURCE: Adapted from Holcomb, J. D. and Roush, R. E. A Study of the Scholarly Activities of Allied Health Faculty in Southern Academic Health Science Centers. 17 (4), 1988.

classroom, laboratory or clinical teaching. Fifty-four percent spent the same amount of time in service associated tasks. In other words, only 24% spent more than one day per week in teaching, but 46% spent more than one day per week in service. Sixty-three percent spent less than four hours per week in research and only 20 percent spent nine hours or more per week in research.

Table 7 highlights the publication records of the respondents in the Kraemer study. Fifty-two percent had two or less publications in their careers, and nearly 50% had not published in the last two years. Thirty-seven percent had published at least one book or monograph and 17% had published more than 10 articles in their academic careers.

In the Holcomb and Roush study, surveys were mailed to 942 faculty representing 23 of 24 schools or colleges of allied Health Deans at Academic Health Centers. A response rate of 83% (780 faculty) was noted.

TABLE 9

Research Respondents' Perceptions of Research Skills Needed

Skill Needed	Frequency	Percent
Getting funded N = 1980	1635	82.6%
Statistical data analysis N = 2009	1417	70.5%
Publishing the paper N = 2008	1132	56.4%
Develop research design N = 2008	1064	53.0%
Write protocols N = 1998	1050	52.6%
Write a proposal N = 2022	1022	50.5%
Writing the paper N = 2032	607	29.9%
Define research objectives N = 2031	573	28.2%
Identify research problems N = 2032	519	25.5%
Presenting the paper N = 1955	469	24.0%
Data cp;:ectopm N = 2039	446	21.9%

SOURCE: Waller, K. V., *et al*. Research skills and the research environment: A needs assessment of allied health faculty. *J. Allied Health* 1988: 17(2): 101–113.

An evaluation of the demographics of the respondents revealed that a) the mean age was 41 years; b) 56% were female; c) 42% had an earned doctorate; d) 47% a master's degree; e) 41% were tenured; f) 80% were credentialed, and g) the mean number of years in higher education was 10.

Table 8 provides information regarding the respondent publication record in referred journals. As noted, 55% (431) reported being sole or first author of at least one article. The mean number of journal publications per author was 7.49. The mean lifetime number of sole or first author of journal publications for all respondents was 4.14, with a range from 1 to 138 articles.

Forty-seven percent (365) reported being second, third or other author on multiple-authored articles. The mean number of articles for this group was 5.29. For all respondents the mean was 2.48. The overall productivity rate of published journal articles for all respondents was .66 per year of employment in higher education. Of the respondents with an earned doctorate, 79% (328) had been the primary author of one or more journal articles.

It is obvious from these studies that allied health education faculty are not very research-oriented, and thus do not demonstrate much evidence of scholarly productivity. In an attempt to determine the barriers to research, Waller et al. conducted a study of 2,157 faculty to assess those unmet needs and skills which they considered essential to scholarly productivity[4]. Their findings (Table 9) indicated that over 50% percent of the faculty surveyed listed the following barriers to research: a) getting funded (83%); b) lack of knowledge in the area of statistical data analysis (70%); c) publishing the paper (56%); d) developing a research design (53%); e) writing a research protocol (53%), and f) writing a research proposal (51%). Other areas of concern included defining research objectives, identifying research problems, presenting research results and data collection.

In spite of the foregoing, there is good news. Research is being conducted by allied health faculty, and increased emphasis is being placed on the need for scholarly productivity by deans and program administrators. For example, Table 10 contains a listing of graduate theses which were reported for 1989 and published by title in a recent volume of the Journal of Allied Health[5]. Ninety academic institutions reported information on 1,155 theses; 1,075 at the Master's level and 80 at the doctorate, the latter including dissertation titles for 72 Ph.D.s, 5 Ed.D.s, 1 D.M.Sc. and 2 Dr.P.H.s.

TABLE 10

1989 Graduate Theses Index

Skill Needed	Master's	Doctorate	Total
Allied Health	8		8
Biology	1		1
Biocommunication Arts	51		51
Child Development/Child Care	4		4
Clinical Psychology	20	12	32
Deaf Education	1		1
Dentistry	7		7
Environmental Health	18		18
Exercise Science	20	1	21
Food Service Management	8	1	9
Gerontology	2		2
Health Education	12	3	15
Health Promotion	10		10
Health Services Administration	11	5	16
Human Kinetics	12		12
Medicine	2		2
Medical Laboratory Sciences	56		56
Medical Record Administration	2		2
Mental Health	3		3
Nurse Anesthesia	27		27
Nursing	44		44
Nutrition and Medical Dietetics	195	27	222
Occupational Therapy	126		126
Physical Therapy	166	6	172
Rehabilitation Technology	18		18
Respiratory Technology	4		4
Speech Language and Pathology	236	27	263
Toxicology	5		5
Totals	**1075**	**80**	**1155**

SOURCE: Index of graduate theses and projects in allied health. *J. Allied Health* 1989: 18(5): 483–549.

TABLE 11

Academic Institutions Awarding Doctorate Degrees in 1989

Subject	Institution	Number
Clinical Psychology	University of Florida	12
Exercise Science	State University of New York at Buffalo	1
Food Service Management	Texas Womens' University-Denton	1
Health Education	State University of New York at Buffalo	3
Health Promotion	Virginia Commonwealth University	5
Nutrition and Medical Dietetics	Oregon State University	2
	Virginia Polytechnic Institute and State University	2
	University of Nebraska-Lincoln	9
	Texas Womens' University-Denton	5
	The University of Tennessee at Knoxville	4
	Syracuse University	1
	Pennsylvania State University	1
	Indiana University	1
	The University of North Carolina at Chapel Hill	2
Physical Therapy	The University of Iowa	5
	University of Georgia	1
Speech Language and Pathology	University of Pittsburgh	9
	Kent State University	3
	Southern Illinois University at Carbondale	2
	Syracuse University	4
	The University of Wisconsin at Milwaukee	4
	The University of Washington	3
	Bowling Green University	2

SOURCE: Index of graduate theses and projects in allied health. *J. Allied Health* 1989: 18(5): 483–549.

As noted in Table 10, 68% of the graduate theses were written in four health professions areas, i.e. Nutrition and Medical Dietetics (222), Occupational Therapy (126), Physical Therapy (172) and Speech Language and Pathology (263). Doctoral dissertations were written in only eight areas, with the majority in Nutrition and Medical Dietetics (27) and Speech Language and Pathology (27).

Table 11 is a listing of those institutions awarding doctorates in 1989. Twenty institutions produced the 80 doctoral candidates. Twelve of these institutions are located in academic health centers. The most awarded at any one institution was 12.

In summary, allied health faculty historically have not done research, nor were they held responsible for scholarly productivity. This is changing, however, and increased emphasis is being placed upon research in colleges of allied health. This is particularly true in those colleges located in academic health science centers. Before research productivity can be improved, however, more must be done to encourage faculty to pursue a doctorate so that they can become proficient in research methodology. Special provisions must be made to assist faculty in this effort and a reward system of some type must be established for those achieving this goal. These rewards can be of a variety of types, and could include such inducements as release time for research, less time required for committee assignments and other administrative responsibilities and, finally, a meaningful salary adjustment upon successful attainment of the doctorate.

If allied health faculties are to achieve the same statue as their peers in other colleges on their campus, it is essential that deans and program administrators recognize the need for, and support of, research. This is not to say that attention must not be paid to excellence in teaching, but rather that a dean's responsibility to both students and faculty is to establish an environment which encourages and nurtures both.

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[5] Index of graduate theses and projects in allied health. *J. Allied Health* 1989; 18(5): 483–549.

The View from the Graduate Dean's Perspective*

Lowell Greenbaum

As graduate school deans we are never surprised by new challenges including imaginative curriculums that are posed to us. Generally, we listen dutifully, but knowing how conservative our faculties are about new programs that are going to compete for stipends and resources, we apply a healthy skepticism and generally, for good or bad, few programs actually make it to the top. However, it is the flexibility of graduate schools in terms of curriculum which distinguishes our school from professional schools in the health sciences campus. This flexibility makes us unique because we can meet those new challenges to academia based on new needs of society. In addition, graduate schools in health science centers must interract as vigorously as they can with our sister schools Medicine, Dentistry, Allied Health Sciences, and Nursing in order to disseminate academic excellence and to support programs which provide added strength to these disciplines. This is of importance to the disciplines we are discussing today.

Our graduate schools are faced with a surprising new challenge—surprising because of the general agreement of its importance to our state and federal governments. The challenge is the concept that economic growth is tied to technology transfer coming out of the universities. More to this challenge is the business world that has discovered that the health care and health sciences industry should be a major target for investment. They have discovered that internationally we are still the leaders in this "industry"; that we have a stable work force of 20% Ph.D.s; that the health sciences and health care will increase in the next ten years. Most institutions have been challenged by their administration in that faculty of *all* schools, whether they have research experience or not, are now expected to become research oriented and to enhance research productivity and the economic growth of the state.

There is increasing evidence that highly developed Ph.D. programs are coming of age in nursing. Support from the National Institutes of Health is considerable. For example, the National Center for Nursing Research has allocated $32 million for research programs and research training, some $4 million in fellowships, predoctoral as well as postdoctoral. We are seeing at the Medical College a new type of student emerging in the future—a crossover between psychosocial research and laboratory research. The view from this dean is that there will have to be new graduate programs to encompass this. We have to encourage biomedical faculty to train students in research and in biomedical concepts who do not quite have the credentials of the usual Ph.D. biomedical candidate. There will be an immediate cry that we are reducing our standards of research training and we will no doubt be reducing the intensity and depth of the content of biochemistry, physiology, etc. Yet, it is this challenge that we must meet, not only in the embryonic nursing research programs, but in finding ways to aid the research training in the allied health sciences.

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*I wish to express my thanks to Deans Mary Conway, Biagio Vericella and Dr. Tom Dirsken for their help in contributing to my thoughts on the various disciplines discussed.

At the Medical College, we have a devoted and excellent faculty of Allied Health Sciences who are well-trained in teaching. Many have doctoral degrees in education. There is sincere concern by this faculty and by the administration as to how they are going to meet the challenge of research. Discussions with the Dean of Allied Health Sciences have led to one of our faculty being given time off from a heavy teaching load to pursue a master's degree in physiology part time. The department is cooperating and will be developing an appropriate curriculum. There are difficulties because of the expected interruptions in research time. The department however, should and does view this as a significant opportunity to enhance its graduate program. First, they have been concerned by the dropoff of American candidates; this will bring the highly motivated students, some of whom do have a good grounding in aspects of science, and help in training of Americans. Second, these students may be able to use their research findings more toward industrial needs because of their background in rehabilitation, occupational therapy and medical technology; third, it will provide a research liaison in other departments which can prove very useful in today's competition for research grants and industrial support. I am looking forward to seeing how this can work and I hope that our discussion today will focus on this kind of solution.

Our Dental School has a unique faculty in that we have some 20 dental degree-Ph.D. individuals. The Oral Biology graduate program requires a dental degree. What are the considerations for the future in terms of the number of dental students? Is there a healthy future in terms of the number of dental students? Is there a healthy future for dental research? The answer has to lie in making research in oral biology financially satisfying. Added pressure has to be applied to the NIDR to support predoctoral and postdoctoral fellowships in oral biology as well as the Dental Scientist Program. I have some concerns here that the past major contributions to research and graduate training may be in some difficulty in the future.

If I were to summarize my thoughts in terms of this dean's perspective, it is that the graduate programs for the health care professions are rapidly changing. These changes are going particularly to affect the biomedical sciences because of the increasing demands of the faculties and administrators to develop research skills in the biomedical area despite much different backgrounds of education than was the rule. The lock step curriculum and the full-time student that all biomedical sciences demand must give way to more individualized curriculums, more part-time research programs. If the graduate school can accomplish this, they will be in a great position in the health sciences to command greater resources, a greater place in the sun, and have the satisfaction of seeing students from all faculties seeding research programs and providing the needed expertise that is so in demand by our health care colleagues.

III. GRADUATE EDUCATION IN MASTER'S ONLY INSTITUTIONS

Presiding: Paul T. Bryant, *Dean, Graduate College, Radford University*
Speakers: Suzanne Reid-Williams, *Graduate Dean, Western Illinois University*
John K. Beadles, *Dean of Graduate School and Coordinator of Organized Research, Arkansas State University*
Mary Ann Carroll, *Dean of Graduate Studies and Director of Research, Indiana State University*

Assuring Mastery

Suzanne Reid-Williams

For a reference point, let me briefly describe my institution, Western Illinois University. We are a public, comprehensive, regional, master's-level institution with an enrollment of 13,238 students, of whom 2,234 are graduate students. That graduate enrollment has increased from 1,250, or 984 students, since 1970 while, at the same time, the undergraduate enrollment has decreased by 1,075. We offer 31 master's degrees and the education specialist in education administration. Western is located in Macomb, Illinois a community of 16,000 without the students. Macomb is 80 miles from three major metropolitan areas, two of which have no public universities. As you discover, we are very shaped by our region.

In graduate education, we frequently talk about two major kinds of graduate degrees: research degrees and professional degrees. For example, in the new CGS publication, "Graduate School and You," the two kinds of degrees are defined and discussed. According to that publication, at the master's level, the research master's provides experience in research and scholarship and may be a final degree or a step toward the doctorate. The professional master's degree, according to the same publication, gives a specific set of skills needed to practice a particular profession and is generally a final degree. Additionally, according to that booklet: "The professional master's degree may be in education, business, engineering, or some other area of professional activity." What that booklet does not emphasize is the increasing proportion of professional master's degrees relative to research master's degrees. The book "The Masters Degree" by Judith Glazer does point out that, in 1985, 84% of the master's degrees awarded were professional degrees including business, education, engineering. Also included in that 84% are agriculture, ethnic studies, communications, computer science, health sciences, library sciences, park and recreation, public affairs, theology and theatre arts. But that 84% does not recognize that many of our traditional research-oriented master's programs are becoming increasingly professionally oriented, as well.

Looking at the 565 master's degrees awarded at WIU in 1989, about 49% were professional master's degrees: education, business, or accounting. Twenty-six percent were Master of Science and 25% were Master of Arts or Master of Fine Arts. Among the M.A. and M.S. degree programs are communications, law enforcement administration, college student personnel, computer science, recreation and park administration, physical education, sport management, theatre, and health education. Adding these degrees to the previously mentioned professional degrees brings the number of professional degrees awarded at WIU in 1988–89 to 389 or 69% of the degrees awarded, still below the national average.

But, we are also seeing an increasing professionalization of the more traditional master's degrees. For example, in our M.A. in English, we have a writing option for those wanting to pursue creative writing or teaching of composition. It includes courses in areas like theories of grammar and in creative writing rather than only the more traditional literature courses in Chaucer or Shakespeare. In our history program, we offer graduate coursework and internships in archival history. The M.S. program in biology is heavily field-oriented with a lot of emphasis on fish and wildlife with courses being given at the Kibbe Field Station along the Mississippi River. In fact, all of our traditional arts and sciences master's programs have what I call "professional tracks or options." That is, they offer opportunities for those who want to pursue what some call "terminal" master's degrees. I personally hate the term "terminal" to be applied to a master's degree program since it sounds as if it is dying; so what I mean is that there are options for those who want a master's degree as the highest degree of formal education. And that is, I think, the primary mission of an institution such as mine in graduate education. Let me explain better what I mean.

Many of the comprehensive, regional, master's level institutions began as teacher education institutions, and for many the first graduate programs were in education, programs developed to meet the needs of a particular profession. Still today, many of us enroll a large number of students in teacher education programs.

Our universities are comprehensive in the sense that we offer a wide variety of programs. We are no longer single purpose teacher education institutions.

We are called regional institutions. In fact, in many states, we are designated by a region: western, eastern, northern, southern. Or we are named for a county or a city. These regional universities are dispersed across the state. The regional nature of the institutions gives special purpose to the university in that we are called upon to serve our particular regions with academic programs, service and even research programs.

We are mostly master's level; that is, we are not the "flagships." I use the analogy that the "flagships" are the battleships. They are in many ways impervious to small changes in the weather. We are like the destroyers—forced to be quick to adjust to changes, alert to the climate, the weather, the tides, and to what others are doing.

Remembering that graduate education is not the major focus, I think that the graduate role of institutions such as mine and many of yours is to offer a variety of programs at the master's level, especially those that serve our regions, to design the programs with a professional orientation primarily for those who are not planning to pursue a doctorate, and to be aware continually of the climate so that our programs remain state-of-the-art to meet the professional needs of our students.

What is our role as deans? I think that we have to remember that, by and large, we are not training academics in our master's programs. And I say that would be true even for students in master's programs at the "flagships." While some master's degree graduates do go on to pursue the Ph.D. and teach at the university level, even in the liberal arts and sciences, less than 30% of our students go on to Ph.D. study, and that is about the national average. Some few are in or are going into community college teaching. But most are going into the many professions. So the first thing that we should be asking is whether the programs, the curriculum, really meet the needs of the students who are enrolling in them. As an example, our M.A. in English literature option requires that students demonstrate mastery of a foreign language. On asking the graduate coordinator why a foreign language is required, I was told that it was because those going on to pursue the Ph.D. would need a language at most schools. I asked how many of the 55 graduate students presently enrolled in English were planning Ph.D. study or were likely to consider it. The response was four or five. There are 50 English major graduate students being asked to meet program requirements which are not useful to their goals. I'm not saying that foreign languages are not useful. I'm missing my Spanish class to be here right now. But a faculty that requires a foreign language for the benefit of ten percent of the students have defined a program that does not meet student needs. If they told me that they required a foreign language because every literature student should be able to read literature of other language speakers, I would find it more rational. I think that we have a responsibility to remind the faculty to look at the curriculum of a program in light of the objectives of the program and the students whom they serve. I find that, many times, our master's curricula are mini versions of the Ph.D. curricula of the faculty of the program and yet we are not educating mini Ph.D.s.

At the same time that we, as deans, are reminding the faculty to look at the curricula of the master's programs, we should also be defining what graduate education is and what it is not. That is, as master's programs become more professionally oriented, our role is to continue to articulate for excellence in graduate education. This is not always easy at an institution which places its highest priority on undergraduate education. As I urge the English faculty to consider dropping the foreign language requirement, I am also urging them to maintain a set of core requirements that all master's students in English should master such as critical methodologies. Each program must have a core that includes the underpinnings of the discipline: the theory, methodology of study of the discipline, its history, ethics, and so on. As faculty from the more professionally oriented programs are dropping the requirement of a research thesis, I am urging them to consider other culmination experiences that are integrative, that cause the students to bring together, information from their various courses and to apply that

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information to solving real problems, culmination experiences that also are summative, that ask students to pursue information beyond that given in their classes. In other words, I am urging that students do "projects" and "internships" where they apply their knowledge and where they have to seek out new information. In other words, our role is to remind the faculty that the master's degree, especially the professional master's degree, is a lot more than the accumulation of 30 hours of coursework.

At the same time that we are articulating excellence, we must be urging that the programs are current. Since a high proportion of the master's degree graduates will be going into professional positions, we owe them an education that is as state-of-the-art as possible. For example, today's economic market is an international market. If our business and economics students are not exposed throughout their programs to international aspects of their subjects, then they probably will be less than well trained for their professions. By making the procedure for accomplishing curriculum changes, new course approvals, and course changes as smooth and effortless as possible, we encourage timeliness in those changes. We know that by encouraging faculty involvement in research, we are encouraging that faculty are up-to-date. But also by assisting faculty to go to professional meetings, we are assisting them in maintaining currency. By bringing recognized professionals and scholars to our campus, faculty and students are exposed to new theories and new practices. Through some discretionary funds in the Research Office and in the Graduate Office, we try to do these things.

Because we have no doctoral programs and because our institutions are thought of as predominantly undergraduate teaching institutions, there is a tendency to blur the difference between undergraduate and graduate education. As deans, we must stress the difference. Our Graduate Council is not a subcommittee of the Faculty Senate and I try to keep the Senate out of graduate affairs partly to keep the difference clear and partly because some of the senators are from departments which do not have graduate programs. In turn, graduate policy is established by senior faculty who serve on the Graduate Council. As dean, I urge less use of the dual level courses and more offering of graduate-only courses. Every time our President speaks of WIU as a predominantly undergraduate teaching university I make it a point to send him a note or catch him in the hallway and remind him to also include the fact that we are a graduate institution—and he is learning.

By the nature or our programs and our locations, our institutions have attracted a high proportion of older, part-time, place bound, employed students. As deans we must see that they also receive necessary services of the university such as phone-in registration, evening hours in counseling center, and especially academic services like advising. Also, in our efforts to serve the region in which we are located, many of our institutions are called on to offer courses and entire degree programs at sites other than the main campus. I think that this is a most appropriate role for us to play, but as graduate deans, we have a responsibility to insure that those off-campus graduate courses and graduate programs meet all of the standards for quality. At Western, we enroll about 800 graduate students at off-campus sites in 71 sections of dual level or graduate classes. All but two sections of those classes are taught by our own full-time faculty. The vitae of two adjunct faculty were reviewed by me prior to offering a contract. Of the courses taught off-campus, over 80% are taught in-load which I strongly encourage. I don't see how anyone does more than 100% and does it well.

Most of those off-campus sections are taught in the Quad Cities where we have use of the Augustana College library which we have supplemented in the disciplines in which we offer courses and programs. We also have use of laboratories in Augustana for use in teaching courses in biology which we do. We supplement their equipment by having faculty haul equipment from the on-campus laboratories to the Quad Cities. Additionally, we offer some classes on Saturdays on campus to allow off-campus students to have access to special labs and equipment. In other words we have attempted to provide equivalent resources for the off-campus classes as for the on-campus. At other sites, the offering of a course is partially determined by the availability of the necessary resources. We are lucky that the faculty are willing to be involved in student advising as well as the teaching of the classes so that the off-campus students have ready access to advising. And we are lucky to have good folks in continuing education who assist us in monitoring and maintaining standards.

I hope you begin to get the idea. I think that the comprehensive, regional, predominantly master's-level institutions have a very special and very important mission in graduate education—a mission very different from that of the "flagship" institutions. And I think that that different mission makes the position of the graduate dean very different at the comprehensive, regional, master's-level institution. Oh, our role is the same in that we somehow are all responsible for fostering and facilitating graduate programs and for articulating a vision of excellence. it's just that our vision is somewhat different because of where we sit, and therefore what is necessary of excellence is different.

Getting More Minority Students into Graduate School

John K. Beadles

I am pleased to have this opportunity to share with you some information on the role of Master's institutions in getting more minority students into graduate study. According to Paul Bryant (Proceedings, CSGS, 1987) what was once a kind of mini-doctorate, a purely academic degree with research orientation, has now branched out.

One branch aims at preparing graduate students for scholarship or research, and the other, the newer one, prepares students for some field of professional practice that does not necessarily involve scholarly activity. These new degrees, usually designated by some special title (Master of Business Administration, Master of Social Work, Master of Fine Arts, Master of Education, Master of Arts in Teaching, Master of Accounting, etc.), emphasize excellence in the professional practice in some particular field.

The different master's degree programs are very important as terminal degrees for some and intermediate programs for others, provided they are quality programs. Dean Mary Ann Carroll reported at the CSGS annual meeting in Little Rock, Arkansas, 1989, that there is a difference between postgraduate, continuing and graduate education. Postgraduate education or work beyond the bachelor's degree can include undergraduate study and continuing education, as well as graduate education.

Some of our prospective graduate students have completed baccalaureate programs, but are not yet ready for graduate education. Among these individuals are some minority students that have slightly above average grades, but did not score well on the standardized examinations. What role could the master's degree play for these individuals? How can master's degree institutions recruit and retain these minority students? In the 1987 Proceedings, Assistant Dean Carol Olson quoted the *Wall Street Journal* (8-22-1985, p. 42): "efforts to enroll minority graduate students in institutions of higher education have expanded. While colleges and universities have been reacting to generally declining enrollments, a more important reason for these efforts has been to achieve social justice. Several southern and border states have been under federal court order since the early 1970s to integrate their public colleges and universities. While some schools have made headway in boosting minority enrollment, most have accomplished little in the overall desegregating effort."

Arkansas State University has made an effort to reverse this decline and succeed in its desegregation effort. Let me first of all tell you about our system of support. The graduate assistantships are identified as a line item in the University budget. A certain number are approved for this institution each biennium. We call them graduate assistantships because some are used as research assistants and others teaching assistants. Each department establishes the duties, responsibilities, and tasks for each graduate assistant. Each department completes a duty assignment form and returns it to the graduate school within two weeks after the start of the semester or term, in order to make certain each graduate assistant is provided a professional experience.

The departments are allocated a specific number of graduate assistantships from the graduate school at $4600.00 per academic year. Six hundred dollars is provided for each (2) five-week summer term. If the department determines the stipend is not competitive, it can increase the stipend by up to one-half with an appropriate reduction in the number of assistantships available to the department.

Each department is encouraged to fill at least one graduate assistantship with a black student. As an incentive a program was instituted in 1982 that awarded departments an additional assistantship for each assistantship filled with a black student.

If it is determined that a black student is available and qualified for graduate study, the graduate school will provide the necessary funding for an assistantship. I want to point out that we are talking hard money and not soft money.

If a minority student is found that does not meet the requirements for an assistantship, the graduate dean attempts to get the appropriate college dean to provide this student with a scholarship in exchange for an assistantship. If this cannot be worked out, a letter is sent to the personnel office to convert the graduate assistantship to a scholarship.

I hope you have heard that the ASU graduate school is committed to increasing minority enrollment and retention. The progress of each of our minority graduate students is monitored. If a good minority faculty prospect is identified during his or her course of study, the department is encouraged to help the individual obtain admission to an appropriate doctoral-granting program (we have some prospective faculty members participating in this manner) or the prospective minority faculty member is hired with an agreement to work toward the doctoral degree.

Minority recruitment is an integral part of the graduate school's plans. Since the fall semester began the graduate dean has visited over a half-dozen predominantly black institutions to discuss graduate education first hand with prospective students.

Schedules have been established for spring visits to the in-state minority institutions. These trips are taken each year with representations from the six colleges with graduate programs.

Also, Arkansas State University's office of Admissions and Records has continued its efforts to ensure that all avenues are being explored which may lead to more effective recruitment of minority students. Toward this goals, the office has maintained a black admissions counselor on staff whose primary responsibility has been to recruit in high schools and at college fairs where a large number of black students are represented.

It should be noted that this year the counselor was required to attend a skills development program at Hampton University. This development program had as its focus the personal and professional development of Black and Hispanic counselors. Topics such as "Preparing Effective Presentations for High School Visits" and "Development of a Recruitment Plan" were discussed in this skills development program.

The ASU admissions representatives (3 white females and one black male) visited all the junior high schools in northeastern Arkansas. the director of admissions and three admissions counselors worked to establish rapport with high school and community college officials and prospective students; they visited schools in Arkansas, southeast Missouri, west Tennessee, and northwest Mississippi; they corresponded with sounselors and students as needed; and they assumed responsibility for minority and alumni programs.

In addition to the recruitment of new students, a program to ease the transfer of students from community colleges to ASU was continued. The program attempts to determine the academic areas of most students who transfer. It also seeks appropriate ASU faculty to join admission counselors on special visits to present programs and to talk with students and community college faculty. Admissions counselors and community college faculty and staff are provided with a list of courses that can be transferred to ASU. This information provides for more accurate advisement and subsequently an easier transition from the community college environment.

ASU has instituted a mentorship program (MAGIC) to help new students deal with the personal and educational problems associated with attending college. MAGIC focuses on black freshmen enrolled at ASU.

Studies indicate that minority students encounter special difficulties in dealing with unfamiliar environments. Many drop out of school because they perceive the faculty, staff, and administrators to be unapproachable. Such students are often capable of doing college-level work, but are overwhelmed or intimidated by the complex bureaucratic system around them.

One of the best ways to become familiar with bureaucracy or the environment is through an experienced acquaintance who is part of that environment. For these reasons and others, we have implemented a mentorship program for black freshmen attending Arkansas State University. The project MAGIC mentorship program encourages each student who volunteers for it to make contact with the faculty or staff member to whom he or she has been assigned. The relationship that develops is personal and professional.

The mentors and students are encouraged to meet whith each other, to talk one-on-one, and to get to know each other socially. We encourage mentors to become many things to their students—advisors, helpers, facilitators, direction-finders, and most importantly, friends.

It is very important that students and mentors make contact with each other; the particular academic concentration of a mentor is not the most important factor. The most important factor is to provide a personal, one-on-one support system for the new students.

However, once the Office of Student Affairs obtains the name of volunteers (mentors), we try to match the student with an appropriate mentor. For those students who have not declared a major, we make the assignment based on the students' interests, their interview and/or request.

The goals of Project MAGIC-Mentors are to provide a feeling of warmth and welcome, assist students in making a smooth transition from home to college, help close the gap between faculty, professional staff, and students, and assist students in setting goals and in decision making.

Faculty and staff who volunteer to participate in Project MAGIC assist students in deriving the greatest possible benefit from the people, programs, and facilities at ASU. This is accomplished by providing students with the opportunity to develop a friendly and helpful relationship with a member of the University faculty and staff. The mentor assists these students with developing personal/social, academic and career goals, and in maximizing the educational opportunities available to them while attending ASU.

The students' obligations are to meet with their "mentor" in informal settings throughout the year, at least six times, participate in an assessment project which will assist them in establishing and prioritizing goals, and attend special functions plus a workshop on study skills.

The coordinator of Project MAGIC attended the conference entitled: "Student

Services in the '90s—Opportunity or Crisis" during the spring of 1989 in Memphis, Tennessee. One workshop focused on "Mentoring: High Ability and Development Students." The presentation included a general conceptual view of mentoring to enhance student-to-student and student-to-faculty relationships, to point out the benefits of formal mentoring programs, and how to create different approaches to fit the individuals or target groups. The discussion included other mentorship programs, as well as ideas and ways to resolve potential problems.

You might wonder why I am talking about undergraduate school; a few years ago the National Science Foundation disclosed a startling level of scientific illiteracy among American adults. By far the highest rates of scientific misunderstanding occurred among those who did not finish high school—pershaps indicating that their elementary education failed to equip them with the basic concepts of scientific thinking ("First Lessons, A Report on Elementary Education in Americans" by William J. Bennett). This underlying assumption should be applied to increasing minority graduate student enrollment by beginning in the elementary school to prepare prospective students for junior high school, high school, undergraduate and graduate school.

Enhancing Minority Participation in Graduate Education

Mary Ann Carroll

Introduction

I accepted Dean Bryant's invitation to be a part of this panel with the understanding that I am not an expert on minority graduate recruitment and retention. Rather, what I bring to this meeting is an intense personal commitment to increasing minority participation in graduate education in whatever ways I can.

As many of you know, Indiana State University offers doctoral as well as master's degree study. Nonetheless, I feel comfortable as a part of this program designed for "master's only institutions" for graduate study as my university is primarily at the master's degree level. As a matter of fact, 80% of those pursuing graduate degrees at ISU are enrolled in master's degree programs.

Guiding Premises

The activities undertaken at Indiana State which are designed to enhance minority participation in graduate education are rooted in three basic beliefs.

First, I believe that as graduate dean I personally can do a number of things that will increase minority graduate student enrollment at my University.

It was important for me to come to this conclusion. As one reads about the problem and its complexity and realizes the number of components and commitments that are needed to implement effective plans, and as one is faced with all the other demands on one's time, it is easy to find reasons not to do anything; to simply throw one's hands up and say,"I can't possibly get all of those pieces in place. It is just hopeless." I would like to focus recruitment efforts at the junior high school level (as is recommended) while simultaneously trying to attract B.S. degree holders. I would like to have someone in my office whose primary responsibility is minority recruitment and retention. I would like to have larger assistantship stipends than I currently have in order to attract more minority students. In short, I would like lots of things I don't have that I believe would help in my efforts to attract more minorities to my campus. What I am saying in my first premise is that, in spite of all the shortcomings of my situation, there are things I can do to increase the number of minority graduate students at ISU, and I accept the responsibility to do those things.

Second, I believe that currently enrolled minority graduate students as well as minority faculty and staff will help me in whatever activities I undertake in respect to minority recruitment and retention.

The new CGS publication, *Enhancing the Minority Presence in Graduate Education*—an outstanding document—notes that since most faculty and administrators are white males, it is that group that holds the key to the ultimate solution to the problem. I agree with that observation, but for immediate help in the form of ideas, energy, and commitment, the greatest group I've found are minority graduate students, faculty, and staff. They have helped me too in an unexpected way—particularly the graduate students. They are so enthusiastic about my personal involvement in minority recruitment and retention that they continually recharge my enthusiasm. You know as well as I that this kind of endeaver is slow and often appears to be unproductive. However, with the zest and eagerness of my Minority Graduate Student Advisory Committee, I find it impossible to be discouraged.

My *third* guiding premise is the belief that support—human as well as financial—constitutes one of the most effective tools in the recruitment and retention of minority master's degree students. We all know there is no single solution to the problem, but I am convinced support is the hub of the solution wheel.

For many years, I have believed that financial support was one of the most important components of a successful recruitment plan. Recently I was talking with one of our black graduate students and, to confirm my belief about the importance of financial support, I asked her if support was the biggest problem she had encountered in respect to graduate study. She responded that it was and then proceeded to describe how she was the only black graduate student in her department (not an uncommon situation on my campus) but that as soon as she got acquainted with the black members of a nearby church, she was all right. When I mentioned support, I meant financial; when she heard the word support, she thought of a support group. I realized at that moment that I had not fully appreciated the importance of support people for our minority students.

What We Are Doing

For many years, Indiana State University has been doing a number of things to try to attract minority graduate students. For instance:

—We participate in the GRE Minority Locater Service.

—Graduate Dean Emeritus Jacob Cobb annually visits a number of historically black institutions to recruit for us.

—I attend the GRE/CGS Forums on Graduate Education, all of which have provided me with the opportunity to talk about our programs with minority students from various areas of the nation.

—I regularly work with departments to supplement their normal assistantships in order to develop more competitive financial aid packages for minority students.

—From the president of the University on down, the whole community is working to increase the number of minority faculty and staff and to ensure that our campus climate encourages minorities to study with us.

Last year I decided it was time for use to try something new. As a result, we held a one-day workshop entitled, "Increasing Minority Participation in Graduate Education." We will have a similar workshop in February, 1990, building in changes that experience taught us were needed.

We plan to contact by letter and with follow-up calls and visits from minority students and faculty all of our minority juniors and seniors with GPAs that indicate ability to do graduate work. We are also working with four four-year private schools in the area in order to include their minority juniors and seniors in the workshop. The minority member of our planning committee has friends at two of these colleges whom he believes will help us identify such students on their campuses and even drive them to Terre Haute for the workshop. The other two campuses are in town so working relationships are already in place and there are no transportation problems to inhibit participation.

Our day will consist of the following:

The morning will be devoted to a test preparation workshop on the GRE. These examinations are frequently perceived as barriers to graduate study, so we are seeking to familiarize the participants with the tests and thus reduce the apprehension they sometimes generate. Test-taking strategies will be discussed and practice sessions on the various parts of the test will be held.

At noon we will sponsor a luncheon for the students, minority faculty and staff, deans, the Academic Vice President (who will get to pay for the Enhancing Minority Participation in Graduate Education luncheon), my Minority Graduate Student Advisory Committee, the Chair of the Graduate Council, and faculty representatives from the four private schools invited to participate. Our luncheon speaker will be our minority Dean of Student Life who will speak on the personal and societal benefits of minority participation in graduate education.

In the afternoon we will have concurrent sessions. One session will be for members of the Graduate Council and faculty with departmental admission responsibilities and will focus on the use of the GRE. This discussion is particularly important in light of the new guidelines for the use of the GRE.

At the same time, students will hear a panel presentation on graduate education.

—What is it?

—Why go?

—How can one finance it?
—How can one find out what programs are available?
—What is it really like?

While faculty and staff will address most of these questions, the last one—What is it really like?—will be discussed by current master's degree students.

The final part of the day will be small group sessions where students may talk with faculty about graduate study in particular areas.

Last year we had 31 participants in our workshop. I'm hoping that number will reach 50 this year. Of the 31 attending in 1989, three are now on master's degree programs and 17 are still ISU undergraduates whom we hope will enroll in our master's degree programs in the fall, 1990. We will, of course, invite these 17 to join our workshop again this year.

Among other things last year's experience taught us was the fact that the workshop does result in some minority student enrollments in graduate study. Also, we learned the absolute necessity of personal contact in getting students to participate in the program. Letters generated almost no response—although I believe they are an important first step—but follow-up phone and personal contacts do generate participation.

My new effort this year has been to develop a Minority Graduate Student Advisory Committee whose primary function is to be the nucleus of a visible, dependable, knowledgeable support group for minority applicants and students. I started this group by writing to eight minority master's degree students inviting them to be my guests for lunch so that together we could brainstorm about ways ISU cound attract and retain more minority master's degree students. Five articulate, thoughtful, interested students responded to my invitation. Incidentally, when I asked each how he/she happened to be attracted to Indiana State, I got five different answers. One came because he had submitted a card from one of the posters we sent to his college and liked the subsequent interaction he had with the institution; one decided to apply after the workshop I just described; one came as a result of the Minority Locater Service; one made the decision to attend ISU as a result of her contact with us at the Chicago GRE/CGS Forum on Graduate Education. The final participant transferred from a graduate program elsewhere when her husband was transferred to Terre Haute. These responses confirmed my sense that successful recruitment demands a variety of approaches.

The luncheon had a number of outcomes. First and perhaps most important was the group's eagerness to help me with recruitment and retention and to become my first Minority Graduate Student Advisory Committee. We are currently working to implement two of the specific suggestions from that meeting.

Next week, members of the Committee are coming into the graduate office to telephone the 17 minority applicants who have indicated an entry date of January 1990. The students will try to answer any questions the applicants may have, and offer their assistance when the prospective students arrive in Terre Haute. They will also describe a social-orientation event planned for the first week-end after classes start. I am hopeful these calls will help the 17 minority applicants feel comfortable with us and hence actually enroll. One of my committee took the phone number of our New York applicant home with her during the Thanksgiving week vacation as she, too, lives in New York. I have already had a return call from that applicant stating she had had a call from my student and she wanted to be sure I knew she really was coming in January!

Our social-orientation week-end is the second activity currently being planned. We will invite all currently enrolled minority graduate students and all new minority graduate students to an informal get-acquainted party on Friday evening, January 19. We'll have "build your own" sandwiches, potato chips, cookies and cokes and have a radio and rent some movies. The Minority Graduate Student Advisory Committee and I will host the party.

Saturday morning from 10:30 to noon we will have an informational session for new minoirity students. Information will be shared by personnel from the library, financial aids office, student life, graduate office, etc. The committee and I will also be there.

Sunday morning at 9:00 a.m. we will have a breakfast for old and new minority graduate students and minority faculty and staff. We have chosen this hour so that those who want to go to one of the nearby churches may do so and will have someone with whom to go.

It is hour hope that as a result of these three days of interaction our minority students—both old and new—will have established contacts that may ultimately develop into friendships and they will get acquainted with the Minority Graduate Student Advisory Committee and with me and so know where to turn for help of several kinds.

Later in the spring, the committee has asked that we plan to call fall 1990 applicants for the same reasons the calls are being made next week and additionally to invite them to come to campus for a specific visitation day. I will arrange complimentary housing and meals. The committee will give them campus tours and take the applicants with them to classes and we will plan an information session.

Conclusion

None of what I have described is new or complex or even very expensive. Rather, what I have shared are some things that are "doable"; that address needs on our campus; and that seem to be generating some very positive feelings between the Graduate School and minority graduate students.

Our efforts will not significantly affect ISU's overall graduate enrollment—and that's not our goal—but I am of the opinion these efforts will increase the number of minority graduate students on our campus. That increase may be of a magnitude of one or of ten or of twenty. Whatever the size of the increase, it will move us toward solving the problem of too few minority students enrolled in graduate study and that is important to me, and to my University, and to this nation.

CONCURRENT SESSION SPEAKERS

Madelyn M. Lockhart
Dean of Graduate School and
Dean of International Students
University of Florida
Teaching Assistant Unions

Joseph Duggan
Associate Dean, Graduate Division
University of California, Berkeley
On Time to the Doctorate

Howard Tuckman
Distinguished Professor of Economics
Memphis State University
On Time to the Doctorate

Concurrent Sessions

Wednesday, November 29, 1989

1. CGS PROJECT ON THE ROLE AND NATURE OF THE DOCTORAL DISSERTATION: PROGRESS REPORT

Presiding: Russell G. Hamilton, Jr., *Dean for Graduate Studies and Research, Vanderbilt University*
Speaker: Gordon Maclachlan, *Dean and Vice Principal (Research) McGill University*

Gordon Maclachlan

At McGill we have given students the option of including published scholarly work as part of the thesis for about 12 years. Only students in the natural sciences, engineering and agriculture take up this option, and only about half of those choose to do so.

When they do, we have a set of guidelines which we built up over the years on advisable inclusions and format for a thesis that includes published or publishable papers. Recommendations include the addition of an overall literature review which is more comprehensive than the usual introduction to a paper, the inclusion of bridging explanations or connecting texts between papers, a general conclusion that points out overall contributions and the cohesion of the work. We also expect appendices to give more details than papers normally have on methods, equipment description, etc. The candidate is required to make an explicit statement of where the papers were (are to be) published and, when multi-authored, on what part exactly was done by the author of the thesis. The supervisor must attest to the accuracy of the claims before the oral committee. Finally, when this option is used, we require that a three-paragraph text which explains this option (appended) be quoted in full in the thesis prologue so that any external or internal reviewers will know that the university accepts this departure from the usual format with the provisos given. We have found this device useful to protect the student from irate reviewers who disapprove of the published paper route.

As for the questionnaire which we have been sent on the role and nature of the dissertation, the part that has caused most discussion at McGill is the section on terms and definitions. Like everyone else, we require that the thesis display "original scholarship", but what is acceptably original differs wildly in different disciplines. One has a feeling that, in some areas, new data—any new data—are sufficient, whether they are important or not. One also has the suspicion that the industrious student can eventually collect so much data that the reviewers are worn down with sheer volume and they grant the degree out of exhaustion—but not for originality, of which there may be no trace. There are some fields, of course, where true originality is an extremely rare event, for example, in math, theoretical physics, or philosophy. It would be folly to demand originality in all Ph.D.s and, in many fields, a very clever commentary or a stiking reassessment of other people's original contributions has come to be accepted as a sufficiently scholarly approach to qualify for the doctorate. We continue to use the word "original", however, with the understanding that it be interpreted broadly.

The term "substantial" is one word that we have stopped using in our thesis regulations. Too often it is taken to mean that the thesis has to be hundreds of pages long and take ten years to prepare. Some disciplines seem especially prone to this—theses in law and ecology often resemble telephone directories and come in two or three bould volumes. We now have a recommended limit of 100 pages for master's theses, but the Faculty would not agree to any limit for a doctoral thesis.

Finally, we require that theses must demonstrate a distinct contribution to knowledge. We ask the student to list at the end of the thesis the unique advances in knowledge that the work has contributed. It is difficult to prevaricate over such a requirement. It focuses the attention of all concerned on just how original/innovative the work has been. It is on that last page where oral committees often concentrate their discussion and debate and where the evaluation process is at its best.

Manuscripts and Authorship*

The candidate has the option, subject to the approval of the Department, of including as part of the thesis the text, or duplicated published text (see below), of an original paper, or papers. In this case the thesis must still conform to all other requirements explained in *Guidelines Concerning Thesis Preparation*. Additional material (procedural and design data as well as descriptions of equipment) must be provided in sufficient detail (e.g. in appendices) to allow a clear and precise judgment to be made of the importance and originality of the research reported. The thesis should be more than a mere collection of manuscripts published or to be published. *It must include a general abstract, a full introduction and literature review and a final overall conclusion*. Connecting texts which provide logical bridges between different manuscripts are usually desirable in the interests of cohesion.

It is acceptable for theses to include as chapters authentic copies of papers already published, provided these are duplicated clearly on regulation thesis stationery and bound as an integral part of the thesis. Photographs or other materials which do not duplicate well must be included in their original form. *In such instances, connecting texts are mandatory* and supplementary explanatory material is almost always necessary.

The inclusion of manuscripts co-authored by the candidate and others is acceptable but, the candidate is required to make an explicit statement on who contributed to such work and to what extent, and supervisors must attest to the accuracy of the claims before the Oral Committee. Since the task of the Examiners is made more difficult in these cases, it is in the Candidate's interest to make the responsibilities of authors perfectly clear. Candidates following this option must inform the Department before it submits the thesis for review.

**The text of the above should be cited in full in the introductory sections of any theses to which it applies.*

A Look at the Crowd

More of the Crowd

Plenary Session II

Wednesday, November 29, 1989

THE QUESTION OF MINORITY SCHOLARSHIP

Presiding: Karen Y. Williams, *Dean in Residence, Council of Graduate Schools*

Speaker: Joyce Ladner, *Professor, School of Social Work, Howard University*

Joyce Ladner

Over the past two decades there has been heightened interest in the perspectives that some scholars of minority descent have about their disciplines and about the roles and responsibilities of universities in training minority students. This interest was an outgrowth of the civil rights movement, and the subsequent black power and black consciousness movements of the sixties.

There were two major developments in minority scholarship which came as a result of these developments. First, as a result of student protests, there was the call for the establishment of programs and departments which focused on the history, experiences, and culture of racial (as in the case of African Americans), or ethnic groups. Moreover, the emergence of ethnic pride amoung Chicanos, Native Americans and among some white ethnic groups provided the context for the development of programs and area studies departments in colleges and universities across the nation. It was this same emphasis on the need to recognize the importance of women's experiences that served as the undergirding foundation for the formation of women's studies departments as well.

Second, some minority scholars asserted that the traditional approaches to what they defined as "mainstream" scholarship were exclusionary and, therefore, did not include the experiences, culture and history of their particular group. This led to what was then referred to as a "black perspective," and for women, a "feminist perspective" and so forth. Each of these developments has had an important influence in shaping academic life over the past two decades. Hence, we are now in a position to examine what have been some of the fundamental issues underlying the emergence of the movement for change within the academic communities across the nation.

What is minority scholarship? Does it differ in substance and kind from the scholarly production of non-minority scholars? Is it political rhetoric or is it a separate, alternative, but equally valid form of scholarship? What are its antecedents? Does it have a viable role in higher education? Does it have assumptions and responsibilities?

First, there is no uniform definition of what constitutes minority scholarship, nor is there a uniform definition of a black perspective. There is, however, a widely held view that American scholarship has, by and large, failed to incorporate the experiences, history and culture of minorities into the concepts, paradigm and theories of specific disciplines.

Second, the concept of minority scholarship has emerged in history, political science, sociology, anthropology, economics, and psychology. It has had an even stronger impact on humanities, particularly in literature. In my own field, the call for an alternative perspective for understanding and "doing" sociology came as early as 1969.

In a book I edited in 1973 titled The Death of White Sociology, which was a collection of essays by over twenty social and behavioral scientists, there was an almost uniform statement on the problems of bias in "mainstream" scholarship, and a call for the development of an alternative body of knowledge that would more accurately reflect the nature of the experiences of African Americans. These scholars recommended that African Americans and others define new concepts and develop new theories which would be of greater assistance in understanding this sector of the population.

The historian and writer Lerone Bennett, as early as 1970, asserted that there was a need for black scholarship because of the perceptual bias non-minority scholars, wittingly and unwittingly, bring to their work. Bennett offered the following prescription:

> It is necessary for us to develop a new frame of reference which transcends the limits of white concepts. It is necessary for us to develop a total intellectual offensive against the false universality of white concepts. . . . We must say to the white world that there are things in the world that are not dreamt of in your history and your sociology and your philosophy.
>
> (Lerone Bennett, "The Challenge of Blackness," Black Paper Series, Institute of the Black World publication, April, 1970.)

Bennett's clarion call for a black scholarship was highly influenced by the black nationalist philosophy of that era. Many of the African American scholars who adhered to this position had been civil rights activists, and had also been influenced by the call for black power, community control of minority institutions, and for a second renaissance in black cultural life.

The historians who were at the forefront of this movement were also influenced by the turn of the century writings of the sociologist-historian-activist W. E. B. DuBois, especially his book, *The Soul of Black Folk*. DuBois asserted that African Americans suffer from a peculiar phenomenon which he called the "double consciousness"—that of being both an American and an African American. They were what DuBois described as two "warring and irreconcilable" identities.

While many minority scholars have long recognized this duality, it was the generation of sixties activists-turned scholars who attempted to go beyond the fusion of identities to which DuBois referred. What they advocated was the development of a specifically "black scholarship." (Ron Karenga, John Henrik Clarke, et al.). The intellectual context they drew on consisted of the ancient civilizations and scholars of Africa rather than the scholarship of Carter G. Woodson, the historian and author who wrote the classic work, *The Miseducation of the Negro*, or of the work of W. E. B. DuBois.

During this early period there was the attempt to clarify concepts, develop more effective methodology to study minority communities, raise issues related to bias and the ethics of conducting research among poor people of color. A central issue raised by many social scientists was what should be the purpose of scholarship. Should it have an applied focus or should it be used in the traditional manner?

Indeed, there was also a debate as to the proper role of the scholar. Should the minority scholar be a scholar in the mold of the white scholar or should he/she be a "scholar-activist?" The issue of the scholar's responsibility was first raised by the sociologist, E. Franklin Frazier, in his article titled "The Role of the Negro Intellectual," published in 1965. Frazier asserted that the African American scholar had a social responsibility to be concerned with such problems as colonialism in Africa, etc. This position was echoed by the sociologist, Nathan Hare, who went a step further. Not only did he chair the first Black Studies Department in the nation, but he also founded the journal, *The Black Scholar*, which served as the unofficial organ for this emerging form of scholarship.

Another important development during this era was the establishment of research centers devoted to conducting research on African Americans. These early efforts to create alternative perspectives, journals and institutions were met with great acceptance by many African American intellectuals and students who felt that such undertakings were consistent with their own values and interests. Therefore, students were among the most receptive to these new ideas concerning scholarship. Many viewed this "enterprise of ideas" that was emerging in minority scholarship as a more realistic understanding of the worlds from which they had come. They saw it as being consistent with their own world views, experiences, and in some cases, with their political ideology.

It should also be noted that the late sixties and early seventies were a period when educational institutions were making concerted efforts to recruit minority students. Affirmative action programs were designed to bring fairly large numbers of non-white students, many of whom were first-generation college, into institutions of higher learning. Many such students would not have had the opportunity to attend college had it not been for such programs. However benevolent efforts may have been, they were not always engaged in with the most effective planning because many students entered institutions which provided few of the additional support systems such as counselors, tutorials, and an understanding and sympathetic environment. Thus students had to learn to cope in an environment that was alienating in many respects. Their reaction to this "strangeness" of environment and the lack of support was one of the underlying factors leading to the campus disruptions.

Hence, an outgrowth of these disruptions was the demand that universities establish Black Studies departments. These politically active students were, therefore, responsible for many of these structural changes in universities. They also demanded that minority faculty be hired, black cultural centers be established, and that specific programs be tailored to their needs as an identifiable racial/cultural group.

The point I am attempting to convey is that an integral part of the movement for minority scholarship came from the political pressure exerted by students. It was not solely the intellectual activity of the scholars, separate and apart form these larger external forces, which was responsible for the development of this thrust. It is highly doubtful that the minority scholarship as an enterprise would have developed to the extent it has had it not been for the role minority students played.

Some two decades have passed since the emergence of the "minority scholarship" thrust. The basic premises, schools of thought and intellectual enterprises which had their genesis then still exist today. These early developments served as the foundation for a much larger and greatly expanded movement in academia. Today, the idea of "minority scholarship" is no longer a novel undertaking, however it is still being met on many fronts with a great degree of skepticism and general nonacceptance. Despite the fact that scores of books have been written, refereed articles have been published, and empirical studies have been conducted in which a "minority perspective" was utilized, there is still a great deal of suspicion, antipathy and resistance in this area.

It is impossible to ascertain all the reasons as to why this is the case. Obviously, it has to do with the fact that, despite the efforts by such scholars to "prove" that the work they conduct in their disciplines from this perspective is valid, many universities have chosen to view such work as political rhetoric, value-ladened, biased, and so forth. For many minority scholars, there has been a heavy price to pay for their activities. Universities have often been slow to grant promotion and tenure to individual professors who appear to be interested primarily in studying African Americans. Moreover, many recently-minted Ph.D.s conceal their interest in "minority scholarship" until after they have been hired and tenured. Indeed, tenured professors have often used a variety of techniques to maintain their credibility in their respective departments and professions by either concealing or de-emphasizing the research and writing they have done form the "minority perspective" for fear that they will be penalized if such work becomes known by their colleagues. Indeed, there are junior-level professors who either do not join or conceal their membership in the minority professional associations for fear of being over-identified with such groups, because they think their tenure may be jeopardized.

The problem is that while perception may, in some cases, be at variance with reality in this regard, the fact is that many minority scholars do feel that such work is not rewarded in academia. That is why many refrain from conducting their scholarly work in this vein.

Curiously, while there is a parallel to be drawn between "minority" scholarship and "women's" scholarship, those individuals whose area of expertise is women's studies have not fared as poorly. They have been able to gain a greater degree of acceptance and credibility for their work. While I will not atttempt to explain why this is the case, it may well be that women activists have been more forceful advocates in their own behalf, and that their demands for inclusion have not been viewed as threatening as have been those demands based on racial exclusion. Somehow, protests for racial inclusion appear to engender a stronger set of emotional reactions than do those which advocate gender inclusion. Perhaps there are too many negative historical experiences linked to the dimensions of race that are not linked, in a similar way, to the issue of gender.

The concept of "minority scholarship" is more difficult to relate to the natural sciences, engineering, medicine, etc., because the content is not as amenable to doing so. Obviously, it is easy to discuss whether Alice Walker wrote her highly celebrated novel, *The Color Purple*, from an African American woman's perspective, whereas it is not possible to discuss optical fiber sensors from the same vantage point. Therefore, individuals in the hard sciences are more likely to feel that a "minority perspective" has little or no relevance to their disciplines. However, there are important related factors that apply even to the hard sciences. There is the issue of minority student recruitment, retention, and support programs to be considered. Minority students need to be encouraged to enter science, engineering and medicine. They need to be provided the necessary supports including tutoring, structured and intensive advising, ongoing monitoring, and they need to be provided with other minority scholars who can serve as role models in the sciences. They need to know that there are and have been outstanding scientists who come from minority groups, and that many, if not most, of them had to overcome incredible odds as well.

Where do we stand today? What is the current status of minority scholarship? While students were successful in getting universities to establish Black Studies programs in the sixties, by the eighties it was clear that many of these programs were treated as isolated entities and had little impact on university life overall. By the eighties, the demand was for what is referred to as "curriculum integration," and it is a demand that has been made not only by racial and ethnic minorities but by women as well. Thus, the issue of gender, racial and ethnic exclusion from the curriculum is likely to remain an issue in the coming decade. As one author has noted, the issue is how to develop appropriate methodologies and substantive programs for taking women and minorities out of the margins and placing them at the center of the analysis.

Still, the resistance remains and it is safe to assume that the field of "minority scholarship," however one defines it, will continue. There will be an increase in curriculum integration as more colleges and universities work to break down the barriers. Indeed, some institutions are undergoing a restructuring in order to retain more minority students. According to a recent article in the *Chronicle of Higher Education*, some of these programs reward the faculty who teach innovtive courses that reach out to students, identifying and working with students much earlier—while they are still in high school (and sometimes sooner), creating "bridge" programs to help students to improve their basic skills, or to provide a "bridge" from college or graduate school into the work world. Indeed, the most successful minority retention programs are those which build in the vast number of support programs, or an infrastructure designed specifically to meet these students' needs.

These creative approaches will become increasingly important in the future because a majority of the new entrants into the labor force by the year 2000 will be non-whites. Institutions of higher education have a responsibility to help to meet this societal need by providing the necessary training to these students.

Moreover, the trend toward global education will make it even more important for educational institutions to engage increasingly in curriculum integration, recruitment, retention and training of minorities.

Finally, above and beyond the issues I have cited, it is the humane responsibility—the public service—the mission of higher education to do the right thing—by being more open, accepting of new ideas from the entire population.

Concurrent Sessions

Wednesday, November 29, 1989

6. ON TIME TO THE DOCTORATE

Presiding: Gene L. Woodruff, *Vice Provost for Research and Dean of Graduate School, University of Washington*

Speakers: Howard Tuckman, *Distinguished Professor of Economics, Memphis State University*

Joseph Duggan, *Associate Dean, Graduate Division, University of California, Berkeley*

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The Labor Market Implications of Lengthening Doctorate Completion Time

(Abstract)

Howard Tuckman*

National Research Council (NRC) data indicate that 32,278 doctorates were awarded in the 1987 academic year, and that an additional 609,126 doctorates were earned between 1967 and 1986. The length of time that it took to complete these degrees was of prime concern to those who received them and to the institutions that produced them. The data reveal that while mean time to the doctorate drifted downward in the 1960s, this decline was followed by a swift increase in the 1970s and 1980s. In each of the eleven fields in this study, mean total time to the doctorate (TTD) increased. These fields include: Chemistry; Physics and Astronomy; Earth, Atmospheric, and Marine Sciences (EAM); Mathematical Sciences (including Computer and Information Sciences); Engineering; Agricultural Sciences; Biological Sciences; Health Sciences; Psychology; Economics; and All Other Social Sciences.

TTD is defined as the time lapse from the year that a student receives an undergraduate degree to the year that he or she completes a doctorate. Because it provides a useful measure of the time lag from completion of a baccalaureate to entry into the labor force, TTD can be thought of as a measure of how quickly the supply of new doctorates can potentially respond to changes in demand. RTD, (registered time to the doctorate) is defined as TTD less time spent prior to graduate school entry (TPGE) and time spent not enrolled at the university (TNEU). RTD is not a measure of the minimum time that a cohort needed to complete the doctorate because time spent registered in graduate school but not engaged in doctorate-related activity is included in the measure. It is an indicator of

*(with Susan Coyle and Yupin Bae)

whether registered time is increasing or decreasing, and this makes it useful for identifying how the resource intensity of the doctorate has changed over time.

The data indicate that from academic year 1967 to 1987, TTD for males rose 1.7 years while TTD for females rose 0.8 years. TTD was, on average, 1.4 years longer for female new doctorates than for males but the rise in the proportion of females receiving a doctorate was not the major source of the rise in TTD. The difference between male TTD and total TTD averaged 0.3 a year for the period under study. Moreover, the fact that TTD grew for females as well as for males, indicates that other forces were at work. The data indicate that rises in RTD were the largest and most frequent source of the rise in TTD between the two years, and in no field was the rise in RTD less than 0.8 of a year. The data also suggest that three of the four fields with the largest rise in TTD experienced increases in TPGE and TNEU.

Six classes of explanations are identified as possible causes of the TTD rise; Epistemic, Institutional, Student Preference, Financial Need, Demographic and Ability Based, and Market-Forces. While these classes are not mutually exclusive, this taxonomy offers a useful way to categorize possible sources of the TTD rise. The failure of any one of these to consistently explain the rise in TTD and its components, as well as differences in the explanatory importance of the independent variables by field, lend support to the belief that no one causal explanation accounts for the observed rise in TTD across fields.

An estimate is made of the person-year loss resulting from the rise in TTD from 1967–86 based on several restrictive assumptions. Total loss is calculated for each field by summing the person-year losses for each cohort from 1968 to 1986, and these numbers provide a crude estimate of the potential addition to supply that might have existed if total time to the doctorate had not changed from the 1967 level. The estimated 82,958 person years lost to the labor force represent 2.7 years of work for the average cohort completing its doctorate during the period. They also represent 14% of one year's work for the 609,102 doctorates who graduated in the 1967–86 period.

The rise in TTD has had, and will continue to have, consequences for society. These include more resource intensive doctoral programs, an extended supply response time to changes in demand, increased attrition, lower economic returns, and possible redirection of the career choices of potential doctoral students. We do not know how much of the rise in RTD has been voluntary and how much has been required by educational institutions. Moreover, several important questions remain unanswered. Will society opt for limits on the number of years it is willing to subsidize doctoral students? Are there natural forces that can limit the growth of RTD? Does an optimal time to the doctorate exist? Are recent increases in undergraduate tuition, in part, a reflection of the increased costs of subsidized graduate education? These, and other important questions are raised by our inquiry.

Time to the Doctoral Degree: The Berkeley Experience

Joseph J. Duggan

The Berkeley Graduate Division is now in the second year of a study of elapsed time to the doctorate and of doctoral success rates. For students graduating in the period 1980–1987, average elapsed time aggregated by disciplinary groups varied between 5.5 and 8.9 years, with marked differences according to discipline. The shortest times were in Engineering, the Physical and Biological Sciences, and Natural Resources, all below the 7-year average, while the longest were in the Professional Schools, the Social Sciences, the Arts, and Language and Literature. Disaggregating by majors, the longest degree program (9.6 years) was in a Humanities field, and the shortest (4 years) was in Science and Math Education. This is a ratio of over two to one. The average completion rate for the cohorts that entered in 1975 through 1977 was 52%; for foreign students, it was significantly higher at 59%.

A typical Social Science student who enters the academic profession will spend 24% of his/her professional life acquiring the necessary doctoral credential; a similar student in Civil Engineering would spend only 13% of his/her professional life in preparation. The problem is doubly compounded when one realizes that fields with longer times-to-degree have correspondingly lower success rates and also pay lower starting salaries for holders of the doctorate. Significant factors in time-to-degree are patterns of support (the teaching assistantship in the Humanities and Social Sciences, which slows progress; the research assistantship in the Sciences and Engineering, which speeds it up), the social pattern of research (carried out in isolation in the Humanities but in research teams in the Sciences), the state of the post-doctoral job market (until recently poor in the Humanities, good in the Sciences), and the amount of historical material that must be assimilated (substantial in the Humanities, negligible in the Sciences). We found no correlation, either negative or positive, between time-to-degree and quality of program.

Increased fellowship support in the Humanities and Social Sciences, targeted at dissertation-writing period, would alleviate these differentials somewhat. In response to complaints of students in these same fields that they feel isolated while writing their dissertations, our Graduate Council has mandated an annual report for each student advanced to doctoral candidacy, to be filled out after the student meets with the dissertation committee. Other ameliorative steps are under consideration.

CONCURRENT SESSION SPEAKERS

Edgar Roulhac
Assistant Provost, Johns Hopkins University and Director, Johns Hopkins Montgomery County Center
New Partnerships: Graduate Education and Economic Development in Montgomery County, Maryland

Peter Suedfeld
Dean of Graduate Studies
University of British Columbia
Teaching Assistant Unions

Robert G. Snyder
Government-Business-Academia Coordinator, Montgomery County Government
New Partnerships: Graduate Education and Economic Development in Montgomery County, Maryland

David H. Cohen
Vice President for Research and Dean of Graduate School
Northwestern University
Graduate Schools as Organizations

7. NEW PARTNERSHIPS: GRADUATE EDUCATION AND ECONOMIC DEVELOPMENT IN MONTGOMERY COUNTY, MARYLAND

Presiding: Joyce V. Lawrence, *Dean of Graduate Studies and Research, Appalachian State University*

Speakers: Edgar Roulhac, *Assistant Provost, The Johns Hopkins University, and Director, The Johns Hopkins Montgomery County Center*

Harley Cloud, *Director of Academic Programs, University of Maryland at Shady Grove*

The Birth of a New Academic Partnership at the Johns Hopkins University Montgomery County Center (Abstract)

Edgar Roulhac

Two unparalleled events have recently converged to create the new Johns Hopkins University Montgomery County Center. Never before in the University's history has a government donated land and construction funds to help establish a comprehensive graduate academic presence at a satellite compus in Maryland, and never before have three highly independent academic divisions been called on to engineer an academic partnership capable of giving birth and vitality to such a complex undertaking. During the Center's first year of operation, three completely independent academic divisions of Johns Hopkins joined together and firmly established their plans to offer nine graduate degree programs and non-credit courses in response to the burgeoning needs of the advanced technology community in the county. The essential ingredients for success have been the splendid cooperation among deans, faculty, and staff, and the implementation of an open, collegial, and supportive planning process. The presentation will review some of the salient issues, challenges, decisions, activities and outcomes that eventually led to the successful establishment of the Johns Hopkins University Montgomery County Center, as well as describe how a unique partnership with government and business influences academic planning, marketing and corporate relations.

University of Maryland at Shady Grove in Montgomery County, Maryland (Abstract)

Harley A. Cloud

The University of Maryland has been offering since 1955 a wide variety of undergraduate courses in Montgomery County at times and places that fit the busy schedules of adult workers. Graduate courses have been offered since 1981.

Interest has grown such that in this past school year there were over four thousand course enrollments. Graduate enrollments account for more than 25 percent of the total.

While waiting for permanent classroom facilities to be built, the university rents spaces in public high schools and at the National Institute of Standards and Technology (NIST). The Montgomery County Government has also provided space at their Public Service Training Academy.

Graduate courses are offered in engineering, management, general administration, nursing, social work and business. Courses are offered in response to the demand of the businesses and interest of the students. The University working in concert with the Montgomery County Office of Economic Development and the Montgomery County High Technology Council continuously assess the education needs through employer and employee surveys. Programs are then developed and offered that meet these identified needs.

The University, in cooperation with NIST and the Montgomery County Government, opened in 1989 in Montgomery County a center for advanced research in biotechnology. It is planned that complimentary education nd conferencing facilities will be developed on the 50 acres of property that have been made available through a donation to the County. The education classroom building has been designed and is expected to be completed by 1992.

In summary, opportunities exist for partnerships between business, government and the University. Faculty interest in the part-time worker is key to developing new programs. All programs in Montgomery County are tied back to the home campus departments for course development, faculty, and quality control.

8. TEACHING ASSISTANT UNIONS

Presiding: C. W. Minkel, *Vice Provost and Dean of Graduate School, University of Tennessee at Knoxville*

Speakers: Madelyn M. Lockhart, *Dean of Graduate School and Dean of International Students, University of Florida*

Peter Suedfeld, *Dean of Graduate Studies, University of British Columbia*

Catherine Urquhart, *Graduate Student, University of Florida*

Madelyn M. Lockhart

To faculty members, unionization of professors, much less of graduate students is difficult to accept, both conceptually and pragmatically. First, protected by tenure and the principle of academic freedom, and trained during their doctoral work to put forth individual effort, professors consider themselves sole entrepreneurs, untouched by the bureaucracy that surrounds them. Professors generally are not team players; they are individualists, operating as entrepreneurs in the laboratories or library cartels, emerging only momentarily to dispense their knowledge in the classroom. Second, the growth rates in enrollment in higher education during the 1950s, '60s and '70s put the professor in a seller's market. He or she held almost monopoly power over a scarce commodity which was completely mobile. Faculty unions which have developed over the years were mainly at the instigation of professors in the lower paid ranks, professors in education or in the humanities whose supply exceeded demand; those who could not command a high price in the open market, those who had little, if any mobility and little or no access to external funding. Hence, they had lesser "value" to the administration and a lesser claim on resources. In contrast, membership in faculty unions is not popular with faculty in business, the sciences or engineering, disciplines in which market demand is high and external funding more readily obtained.

Finally, from a practical standpoint, unionization on the campus was and still is thought to be a major deterrent to the establishment and continuance of the happy family atmosphere of professors "doing their own thing" and individually leading the young students to intellectual excellence and high professional performance.

When the specter of unionization of graduate assistants rose on the University of Florida campus, all the attitudes and characteristics of the professorship which I have just described came to the fore. The close family relationship between student and faculty, the individual mentoring so necessary to doctoral education would be destroyed. There was little understanding of why the graduate students wanted to unionize. As one administrator said to me, "What do those students want?"

Well, what they wanted was nothing more than that which good management provides for its employees. Although graduate assistants are students, they are also employees. In large research institutions they teach many of the undergraduate classes and do much of the "grunt" work in the laboratories. Most institutions could not function without graduate teaching and research assistants.

What they are asking for are established rules and procedures to protect them against exploitation and discrimination. In Florida, public employees do not have the right to strike, so this, the ultimate weapon is not available to the graduate assistants. What is available is collective bargaining to attain a contract which deals with workload, appointments, assigned duties, stipends, evaluations and a grievance procedure.

Workloads have often been exploitive and discriminatory. I can give you examples from my own campus in which Teaching Assistants' workloads vary widely even within a single discipline—cases where the Research Assistants' workloads exceed 60 hours a week not on the students' dissertations, but rather on research necessitated to meet a deadline on an industrially funded project. Foreign students are especially vulnerable to exploitation and discrimination. I would be very surprised if you could not find many cases on your own campuses.

Students frequently are not notified until almost the last minute as to whether they will receive funding or what their next assignment will be. Lack of adequate notification makes financial planning and proper preparation difficult, if not impossible. Typically, department chairs wait until the last minute, even though they could make teaching and research assignments much earlier. Such delays allow the administrator complete flexibility, but play havoc with the students' financial planning and academic preparation.

Similarly, faculty resent having to give students written evaluations of the services performed. They maintain this is unncessary; after all, they tell students when they are performing well or badly. That is to say, they probably do, but judging by the difficulties these haphazard evaluations have created, oral communication apparently is not good enough. We have several disputed cases right now which may develop into legal action in which all communication was oral. Therefore, it would seem that written evaluations are a protection of the faculty and administrator as much as of the student.

Collective bargaining on stipends is the most difficult issue to resolve. All of us deal with a market which reflects supply and demand; faculty salaries and student stipends are tempered by the salary scales of industry and government. Obviously at the moment, the stipend offered to a good student in engineering or accounting is going to be higher than that offered to an equally talented one in music. In addition, universities compete among themselves for the best students. Although the actual average increase in graduate assistants' stipends given by the departments at the University of Florida this past year was over 8%, the state authorized funding for only a 4% increase. The 1989–90 contract mandated that the increase be distributed, 3.2% across the board and .8% merit. Thus, some students who might not have received any increase were assured at least 3.2%

while others received much larger increases in order to meet the market. Hence, collective bargaining on stipends has little effect except to insure some minimal increase to those continuing students in disciplines where the supply exceeds demand. In addition, there is also the opportunity cost which students in some disciplines such as engineering and business bear to attain a doctoral degree; a sum which far outweighs the stipends most universities can pay. Hence, there is external pressure to increase stipends for graduate teaching and research assistants, whether unionized or not.

The establishment of a formal grievance procedure is, I maintain, a useful tool to the administrator. It provides a written legal procedure that can be used when a student presents a case that is clearly one of exploitation, discrimination, or other unfair treatment. There is little doubt that clear cut procedures protect the faculty and the administration as well as the student.

Graduate students are a vital part of the institutions of higher learning and there is a need for strong, effective student organizations on our campuses. We need the students' feedback on the viability of the policies we create. Many of our graduate students are not youngsters just out of undergraduate programs, but older, trained, experienced professionals. Some have raised families and managed budgets; some have served in the military or the Peace Corps and thus bring valuable international experiences; some have served as managers in industry or government. They have ideas and experiences to share with us. We need their participation in the decision-making process; we need to use our students' knowledge and expertise.

Student participation in some decisions is, I believe, inappropriate, and sometimes illegal, especially those decisions involving admission or evaluation of other students. However, the problem we face on most of our large campuses is how to involve students in those matters in which they have legitimate concerns. Often neither graduate assistants' unions nor graduate student councils are broadly representative of our graduate student bodies. Getting students to participate in faculty committees and on councils without giving them a strong voice will not be more than a token; it will not result in active student participation, yielding the kind of information we want. But meeting individually with student groups and hearing them out is virtually impossible. In addition, most students who come to administrators are fearful of being identified, especially if the problem involves complaints against faculty who have enormous power over their futures.

Graduate assistants' unions are not a complete or perhaps even the most effective solution to this dilemma. My own experience at the University of Florida leads me to believe that had we found an effective way to communicate with our graduate students and had we been better managers in meeting their legitimate concerns, we would not have a graduate assistants' union. But if your campus is unionized, it is not, in my opinion, the end of good graduate education or good relationships between faculty and students. It is not something to be feared, but rather it is an organized student group with which to work in order to construct a healthy environment for graduate education.

TA Unionization at The University of British Columbia
(Abstract)

Peter Suedfeld

A brief review of the history of TA unionization at The University of British Columbia reveals a small number of basic principles that administrators and faculty members should bear in mind during the process from the first expression of TA grievances through a unionization drive and subsequent collective bargaining. The most important ones are:

1. It is to be benefit of all parties to deal with groups of TAs who express grievances, rather than ignoring them and thereby encouraging escalation toward the formation of a union.
2. In negotiations, academics (preferably with experience as department heads) must be involved as members of the actual bargaining committee. Any professional negotiator employed by the University must accept as paramount the advice of these individuals when it comes to academic issues.

In the short term, unionization tends to drive a wedge between TAs and their supervisors; over several years, this feeling diminishes. Union leadership tends to be concentrated in the hands of students who are motivated by ideology and a desire for confrontation, while the vast majority of TAs becomes uninterested in the union and its activities. Unionization appears to be a poor bargain from a cost-benefit point of view, either for TAs or for the University.

Catherine A. Urquhart

Introduction

To begin, let me pose a question. How many of you have ever been a union member or presently are associated with a union? Only six? Your response is not surprising. Most of you never have had contact with unions of any type, let alone an academic, faculty union, or a teaching assistant union.

It is my purpose here, as a past grievance steward for an active teaching and research assistants union, to provide you with an understanding of the benefits that a graduate assistants' union can bring to a campus. I will give a brief history of the Graduate Assistants Union (GAU) at the University of Florida; then will discuss what a contract can provide for graduate assistants (and the University as well); how to implement a contract through a "meet and confer approach"; problems encountered in implementing a graduate assistants' contract; and, last, give examples of issues that might arise from the ongoing process of implementing a contract.

Before beginning, some terms need to be defined. "Graduate assistant" refers to both teaching and research assistants. "Contract" refers to a collective bargaining agreement negotiated by gradaute assistants and a statewide university governing board. "Letter of Appointment" is the employment agreement between a hiring department and a gradaute assistant. It lists the number of hours of employment, the supervisor's name, specific job responsibilities, and the stipend rate.

A Brief History of A Graduate Assistants Union

Graduate Assistants United (GAU) is a teaching and research assistants' union in Florida public Universities. It is affiliated with the United Faculty of Florida (UFF), the union that represents public university and community college faculty in Florida. The Graduate Assistants United has two chapters in the state; one at the University of Florida, the other at the University of South Florida. Graduate assistants at the other seven state universities have chosen not to unionize.

The movement to organize graduate assistants began in 1975 at the University of Florida. The impetus came from low wages, high tuition bills, lack of control over working conditions, and the absence of job security. During the next five years, the graduate assistants worked to become recognized as employees who had the right to unionize (organize). In 1977 the Florida Public Employees Relation Commission ruled that graduate assistants were employees, and in 1980 Graduate Assistants United became the legally recognized bargaining agent for all graduate assistants in the state university system. In June 1981, Graduate Assistants United encountered a major setback when the Florida State Legislature enacted a bill making it illegal for graduate assistants to unionize. Later the same year a Florida Court of Appeals ruled that graduate assistants were state employees, whose right to organize was protected by the Florida constitution, and thus declared the legislation invalid.

Troubled with low membership and few leaders, Graduate Assistants United did not see much activity between 1981 and 1985. In 1986 new officers were elected and committed themselves to increasing membership, improving a weak contract, and obtaining state-funded in-state tuition waivers. Conducting letter writing campaigns to state legislators, and organizing lobbying trips to the State Capitol resulted in an improved contract, in-state tuition waivers, and increased membership.

Between 1987 and 1989, Graduate Assistants United officers focused on restructuring the organization in order to better serve its members, solve logistical and funding problems with tuition waivers, and implement the Contract. The following discussion focuses on the experiences of a Grievance Steward who began implementing that Contract at the University of Florida.

What A Contract Can Provide Graduate Assistants and the University

A contract for graduate assistants is a benefit to the university as well as the graduate student employee. It provides a framework that sets forth rules and procedures for such things as hiring and dismissal, sick leave, academic freedom, outside employment, office space, distribution of stipend increases, tuition waivers, classroom visitations, and performance evaluations. A contract for graduate assistants also assists administrators in assuring the fair and equitable treatment of all assistants in the university because it outlines the administration's as well as the assistant's responsibilities as employer and employee.

Implementing A Contract for Graduate Assistants Using A Meet and Confer Model

When Graduate Assistants United began the process of implementing its Contract, a choice was made to use a meet and confer model with the Graduate Dean (who had been designated as University representative) rather than a confrontational or adversarial model. This choice was made for a number of reasons. First, the Grievance Steward and the Graduate School Dean agreed that it would benefit everyone if problems could be resolved through informal rather than formal grievance procedures. Second, the personal styles of the Grievance Steward and the Graduate School Dean favored open and candid discussion of contractual problems and potential grievances. Third, the Grievance Steward and the Graduate School Dean shared a commitment to increasing awareness and better understanding of the Contract throughout the University. Fourth, higher education in the United States traditionally has used the meet and confer model to resolve employment and academic problems between faculty and administration, even when there has been faculty union representation.

The results of using the meet and confer model to implement the Contract were favorable. In the first year of implementation, an increased awareness of the Contract and better understanding of its purpose was seen among graduate assistants, faculty and administrators. At the end of the second year, a list of contractual changes was developed for future negotiations that would improve the effectiveness of the Contract. One contractual change was the addition of a required oral step when beginning a formal grievance. This required that the grievant, the graduate assistant, discuss the problem with the immediate supervisor, who was required to respond in writing within a specific time to the problem or complaint. This approach avoided further difficulties that might come from filing a written grievance with the Graduate School before the supervisor or department chairperson had an opportunity to work out the problem. It also provided an avenue for vocalizing graduate assistants' work-related concerns and required supervisors to respond to the concerns. At the beginning of the third year of the Contract, the Graduate School, as a result of the meet and confer process, had identified and standardized such problem areas as tuition waiver disbursement, letters of appointment, and performance evaluations of the graduate assistant.

The use of the meet and confer model also affected the number and type of formal grievances filed. Over a three-year period, only one formal grievance was filed, and it was filed in order to assist the Graduate School Dean in dealing with departments who were not following contractual procedures or meeting payroll deadlines. (Some graduate assistants had to wait two or three months to get paid.) The meet and confer model also helped to prevent two potentially time-consuming and embarassing grievances. One had to do with dismissing a graduate assistant who had psychological problems, in a department that had not followed the Contract in that dismissal. Through meet and confer, the grievance was resolved and the graduate assistant was retained on the condition that the assistant would enter psychological counseling for the problems that had contributed to the difficulty. The other potential grievance involved an inappropriate intervention of an Assistant Dean in a teaching assistant's classroom. Because of an undergraduate complaint, the Assistant Dean took it upon herself to enter a teaching assistant's classroom without previous notification and proceeded to tell the assistant, in front of the class, that he was not teaching the subject properly. Leaving the class to the Dean, the assistant contacted the Grievance Steward, who was able, because of the meet and confer process, to contact the Graduate School Dean, who intervened and corrected the situation before the next class meeting.

A benefit from the meet and confer process, which had not occurred to the Grievance Steward or the Graduate School Dean at the beginning of the process, was the development of an informal referral system for academic problems. As a result, graduate students now are less afraid to approach the Graduate School Dean with academic concerns or problems.

Problems Encountered In Implementing the Contract

At the beginning of the implementation process, faculty and administration lacked awareness about the Contract. As a result of the Graduate School Dean's continuing attention, that awareness has increased. Unfortunately, problems still arise because some supervisors do not acquaint themselves with the Contract until a potential grievance arises. Another problem encountered in implementing the contract was the viewpoint, held by some faculty and administrators, that unions are adversarial by nature. That viewpoint also influenced graduate assistants' perceptions of the control that faculty had over them. Of special concern to graduate assistants was the effect that their union membership might have on their continued employment as an assistant, or on any academic decisions made by their advisors and department chairpersons.

Graduate Assistants also lacked awareness of how the Contract could help them, especially international graduate assistants, who were not familiar with the idea of representative unions. There also was confusion between employment and academic grievances (which the Contract does not cover), which forced the Grievance Steward to develop a referral system for non-employment related problems (e.g., academic,, health and personal financial problems). Graduate assistants had an overwhelming concern about what might happen to them if they sought help for an employment problem. Even if the problem involved only a clarification of a contractual point, graduate assistants were (and still are) very much concerned about the retaliation from faculty members or the department administration.

Yet another concern with implementing the Contract is the problem of replacing grievance stewards when their term has expired. In a student-run organization, such as student government, the yearly change of officers may not affect working conditions, adherence to a contract, or stipend increases. But in contrast, a representative union requires underlying consistency in order to conduct negotiations, lobby legislators, and continue the ongoing process of implementing the contract.

Examples of Issues That Arise While Implementing the Contract

Using a meet and confer model to implement the Contract has continued the process of identifying changes needed to make the Contract more effective. Because the language of the Contract has been improved and graduate assistants are more aware of it, issues have become more specific. Graduate assistants are learning that some parts of the Contract need to be reexamined because their needs are not being met in the present Contract. Such things as the department providing required course materials in a timely manner needed by the graduate assistants, delineating the support services the department will provide to a graduate assistant (e.g., typing, course registration, office supplies), class sizes, and required teaching assistantship training are just a few examples of the issues that have been raised recently by graduate assistants as the process of implementing the Contract continues.

Closing Remarks

A contract for graduate assistants is advantageous not only to graduate assistants but also to the university. It provides a foundation for solving work-related problems and for identifying changes to be made by improving the working conditions of graduate assistants. This in turn, contributes to the overall quality of teaching and research in the university.

Plenary Session III

Thursday, November 30, 1989

SHAPING A PUBLIC VIEW OF GRADUATE EDUCATION

Presiding: Vivian A. Vidoli, *Dean, Division of Graduate Studies and Research, California State University, Fresno*
Speakers: Lee Daniels, *New York Times*
Anthony Flint, *Boston Globe*

Lee Daniels

I'd like to make my remarks within the framework of two propositions.

The first is that the media covers complex subjects badly.

This circumstance stems from the media's, to a great extent, necessary, focus on the immediate, the sensational (meant non-perjoratively), and its desire/need/requirement to reduce what it covers to what is most easily grasp-able—and to make what it covers "easily grasp-able" even if it's not and ought not to be. Believe me, I fully recognize that it is the media's task to make the things it covers easily understandable. That is a positive and laudable goal. But sometimes, with particular topics and on particular occasions, some to many of the media take the easy way out, reducing the complexity of what they're covering to such simplicity that it's actually distortional.

The coverage of the 1988 Presidential campaign presents an obvious example of this distortional behavior, the, one must say it, willful acquiescence in ignoring the complexity of issues, and in allowing a simplistic "spin" to be put on complex issues. I recognize that political coverage is a *special problem* for the media because, as the past two decades have shown, the establishment media, especially, is so easily manipulated by that breed of political specialist now known as "the spin doctor." It is unable to preserve its own integrity in the face of the increasing interaction between the media and the politics itself as a form of media—that is, as a source of information, entertainment, "infotainment," as well as by that increasingly dangerous characteristic of our age—the primacy of image over substance.

Or, as another example, take the extraordinary, gushing coverage of the pro-liberation movement in Beijing in recent months, where such words and phrases as "Freedom fighters" and "pro-democracy forces" were firmly planted in dispatch after dispatch *without quotations around them*. Was such advocacy journalism a "service to the Revolution," if you will, or was it, as I think it was, a grave disservice to understanding the forces of change boiling in China?

The second proposition is that the media especially covers badly complex subjects which it deems "off the news".

"Science Times,' the Tuesday special section of the *Times* actually proves the point in my view. It provides a way to make scientific issues more accessible to a general readership, and to deal with a complex subject which in newspaper and broadcast terms can't compete not only with the latest political developments in far away places or even the local state capitol, but which also would not be 'competitive' stacked against even the serious water-main breaks New York City has been suffering through for the past year.

Consider the media coverage of the U.S. space program—that is, the decline of media interest in it. One could make the argument that now is the very time the American public needs to be discussing the future of space exploration in the most searching of terms. Yet, despite the attempts of the "big guns" of the media, the topic of space exploration has all but disappeared from our screens and newspapers.

The coverage of the Challenger explosion and its aftermath was, by and large, a one-time "big deal," made riveting by the loss of life. There actually were relatively few press people at the launching itself. The *Times* had three reporters plus an editor there because it has maintained its commitment to the coverage of space exploration, and because it can afford to "send in the troops" almost whenever it wants to.

Now, consider coverage of public school education, or of the concerns over the quality of undergraduate education. In the media, there's been an almost exclusive focus on the 'politics' of the debate—that is, a dependency on somebody to say or do something sensational to provide the "news peg" for doing a story—with little substantive exploration of the background. Susan Chira's profile of Eleanor Duckworth yesterday (Wednesday, 29 November) on the *Times'* education page was notable precisely for its exploring her views at length. That kind of article is all too rare.

Why are things this way? Well, some of it is probably attitudinal on the part of media types—short efforts, an addiction to short bursts of furious energy, a desire not to take work home . . . that sort of thing. But, more seriously, it is driven by two powerful institutional imperatives. One is that most of the media, because they don't have enough personnel for the topics they must cover, simply can't spare reporters the time it takes to deal with subjects in any depth. The other, related imperative is meeting the deadline, whether daily or weekly—which means that one's attention span has to be short.

Well, what can be done? How can you educators get the media to begin to examine graduate education?

In one sense, it's very simple: cultivate editors and reporters. You have to begin to explain the issues and the work you're doing for local and state governments that has immediate relevance to the public. You've got to insinuate yourself into the media in small as well as large ways. You've got to get your faculty experts on various topics into the pool of people that reporters call for comment on various topics. You've got to do this not only for your own immediate purposes, but because you must begin preparing the media to deal with the challenges of the 1990s that are going to shake higher education as well as every sector of this society and this world. You'd better be ready to present your side, and not simply to react to the initiatives presented by others.

I know that many of you are already implementing such strategies—a strategy is what you need—but you've got to figure out how to become more effective at it, for your own sake, and for the sake of society as a whole.

Anthony Flint

It's a pleasure to be here on this panel. What you're getting in my case is really more of a layman's view of these matters, as I just started covering higher education for the *Boston Globe* this year. However, I suppose freshness does have its advantage, if one does not mind trading off some cynicism for perhaps a little naiveté.

What are my impressions of the public's view of graduate education? After being a reporter covering higher education for these months, I can say this: people generally think it's expensive, puzzling in the amount of time it takes, remote in its arcane jumble of researchers and scholars and of little use—unless, of course, one's son or daughter is pursuing a degree.

But I'd like to take a bit of a different angle from that of my colleagues here and focus on the cost issue as an example of the kind of image problem by which you are all challenged. There are three areas where this has come up in my short time as an education reporter.

The first and most obvious manifestation of the public's concern about cost is the Justice Department inquiry into alleged price-fixing among some 55 institutions, many of them in the Ivy League. As consumers, Americans are suspicious of a rip-off; they're itching for the slightest hint of outrage. For consumers of higher education, the Justice Department probe gave them just what they needed.

One of your own, Vanderbilt's Chester Finn, captured the public's response best when he scolded these institutions for "deciding what's best for everyone," that is, trading information on financial aid packages to ensure uniformity. (I suggested in a Sunday column that Mr. Finn's willingness to speak out against these elite institutions might have been prompted in part by his rejection from the ranks of Harvard, but he assured me that was not the case).

But resentment quickly grew over the seemingly illicit activities of the overlap group. Add that to reports that some colleges kept their comprehensive fees artificially high—because they did not want to fall out of step with "elite" competitors—and the process of crystallizing public opinion was inexorably underway.

So despite perhaps well-placed suggestions that the Justice Department should be spending its energies elsewhere, just about everybody is on the Justice bandwagon and most people are presuming guilt. In my view, the probe was just the catalyst: consumers are clinging to it as one reasonable explanation of their $21,000 annual bills. The old explanations of higher labor costs and building maintenance just isn't cutting it anymore—not with these sums. They needed something else to satisfy their suspicion, and the probe fit the bill.

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The second area where I see the cost issue being played out has to do with quality. In this respect, too, consumers in particular are on the warpath. The high cost of "name brand" institutions just doesn't hold up when one of the finest graduate programs in the country, the University of California, Berkeley, costs so comparatively little (for in-state residents). Indeed, growing numbers of Americans are rejecting the idea—and the price tag—of a four-year undergraduate education plus a professional degree, and going to a two-year school instead. In Massachusetts, two-year schools have begun to shake their somewhat tarnished image, renaming themselves "technology" schools and carving themselves a nice little niche in the tightening student market.

Allegations about the professoriate, contained in such books as *Profscam*, also prompt people to wonder about just what they're paying for when it comes to the traditional, prestigious schools of this nation.

What is the relationship between soaring costs and quality? If Harold Shapiro can cut costs at Princeton and the institution survives just fine, why can't it be done elsewhere? Again, I think the suspicion is built in, and when evidence trickles down that fits the bill, the opinions get set in stone.

The third area where I've witnessed rather sour public perceptions of cost has to do with what's happening in my home state of Massachusetts. . . . Public higher education in Massachusetts is under siege: people don't want to pay more in taxes to support it, and they say it's because the state colleges and universities are not sufficiently lean and mean.

Now, this has much to do with the general no-new-taxes fervor that is gripping the state, but the basic argument is, public higher education is a patronage haven for do-nothing paper-pushers in high-paying jobs, a wasteful money pit of a bureaucracy. "You ask anyone on the street and they'll say, 'cut the fat. You've got to cut all that fat.' " Franklyn Jenifer said to me recently in near-exasperation. He is frustrated because in truth, the system has sustained millions in budget cuts and has already pared down operations to the bone.

A recent cartoon in the *Boston Herald* summed it up: two men are sitting in a bar, and one says, "I'm not willing to pay new taxes for higher education." The other man is incredulous. "What about international competition?" He asks. "Pretty soon the entire state is going to be owned by foreign interests. Pretty soon the foreigners are going to take control!" "Fine," says the first man, hoisting a beer. "As long as they don't raise my taxes."

The point is, even when there is clear evidence that higher education is an important investment for the future, there is stuboorn resistance once those opinions bcome gospel.

And there is plenty of evidence around to support graduate education: in a recent *Globe* poll of New England college freshmen, fully 53 percent said they were going to college as a step toward further educational goals, such as graduate degrees in law, business or medicine. Thirty-seven percent said in the same context that they viewed their undergraduate years as a time for liberal arts enlightenment, and that graduate school was where you trained for a job.

I must say on a personal note that I follow that pattern. I attended Middlebury College and studied English and history, then went to Columbia for a master's degree in journalism. Many of my peers have gone the same route: if not to law, journalism, business or medical school, then to the Yale School of forestry, or the Kennedy School or Fells. It's widely viewed as a valuable and necessary step in life.

So with all that supporting your cause, why are you still getting beat up? By way of conclusion, allow me to take a chapter of Jim Baker's playbook. I think you need some spin control.

Now that may seem strange coming from a reporter, but I had some political experience recently that makes me say that. I was an administrative press secretary in the Dukakis presidential campaign, essentially a traffic cop linking the Boston headquarters and, in my case, the western states. As everybody knows, the campaign was mostly a matter of trying to fight off the image of Dukakis that George Bush created—soft on crime, frenzied about gun control, weak on defense. In part because the candidate did not respond much himself, the campaign was always on the defensive.

I remember they had Dukakis do one commercial that had him flicking off a television set showing a negative spot by the Bush campaign, as if to say, turn this off! It's got to stop! But a lot of those images stuck, and it was simply impossible to change public opinion once the process was set in motion.

I think the same dynamic is at work with the public perception of graduate education. You don't have a political opponent—per se—to keep the fire stoked, but you do have us—the press—and we're interested in a lot of these issues. They are negative images to you, but to us they are news. Any kind of comflict is news. And we're always good for uncovering the outrage—the rip-off—and looking out for the little guy.

Now I'm not suggesting you hire Roger Ailes, or sign up fancy PR firms or hire high-priced ex-reporters to run your news offices. What I am suggesting is that there should be greater awareness of just how easy it is to be on the defensive when this inexorable opinion-forming process is at work. The worst thing is to do nothing.

It's not enough to use your best brains to provide articulate responses. A first step might be the spinmaster's favorite axiom: if you're losing, change the game. Bring the debate back to your terms, and frame the issues the way you want them framed. If you let the other guy define you, you're in trouble.

Business Meeting

Thursday, November 30, 1989

Presiding: Robert T. Holt, *Dean of Graduate School, University of Minnesota, and Chairman of the Board of Directors, Council of Graduate Schools*

President's Report: Jules B. LaPidus, *President, Council of Graduate Schools*

Financial Report

Other Business

PRESIDENT'S REPORT

Jules B. LaPidus

As always, it is a pleasure to have the opportunity to see all of you at our national meeting and to be able to spend a few moments telling you about some of our activities of the past year and our plans for the future. With respect to legislative activity, one of the major issues before us is the reauthorization of the Higher Education Act of 1965 and, as you can imagine, a great deal of preliminary work is going on, both in the Congress and in the higher education community, to try to define the areas of agreement and disagreement relative to this important activity. We are in the thick of these discussions and have the benefit of Thomas Linney's experience and expertise in representing the views of the graduate community. Obviously, there are day-to-day budget concerns, and the tax issues—particularly as they apply to employee benefit plans—are not settled by a long shot, but we continue to work on them and, as always, appreciate your counsel and assistance.

Our information activities continue to improve under the guidance of Peter Syverson, and our enrollment survey, particularly as it begins to represent several years of data, becomes more valuable by the moment since we are now gaining the capacity to look not only at total figures but also at discipline-related enrollments, and to provide specific information that may be of use to a particular institution. The value of information we provide to you is dependent on the validity of the data that you provide to us, and I want to take this opportunity to thank all of you for your hard work in providing us good information that we can use in support of graduate education, both nationally and locally.

There are some specific issues of interest in terms of our current activities that I thought I would mention briefly. First, we have been engaged in a great deal of activity related to our publications, and a number of task forces are working simultaneously to produce new CGS policy statements and other documents.

During this past year we have published two new documents, one on off-campus education and another, resulting from our series of idea exchange meetings with approximately 100 graduate deans, dealing with the question of enhancing the minority presence in graduate education. Currently, task forces are working on revising our documents on *The Doctor of Philosophy Degree, Organization and Administration of Graduate Education*, and *Foreign Students in U.S. Graduate Schools*. In addition, we are preparing new materials on program review and on graduate student financial aid. We expect all of them to be published during 1990; they will represent a new look in CGS publications in addition to being expanded significantly in the case of those that represent new editions of former documents. We have also revised our general information brochure that describes the activities of CGS, and some of you may find this useful in your institutions.

Another change that took place this year was in our consultation service. In the past, we have provided two general kinds of consultations. One has been on issues having to do with the administration of graduate education broadly defined, and the other has dealt with the actual academic review of graduate programs in specific disciplines. In this latter case, we have relied upon deans to provide us with the names of individuals on their campuses who would be useful as external consultants in these program reviews. Over the years, we have found it exceedingly difficult to maintain any kind of reasonable list since there are so many changes in faculty due to retirements or resignations; and as our Board looked carefully at the consultation service, we decided that it was not realistic for us to continue to try to provide consultation in specific disciplines. Instead, we want to concentrate our consulting activity on issues related to the administration of graduate education, including the development of information systems, recruitment, financial aid, research administration, governance, and a host of issues related to the operation of a graduate school. In this case, the consultants we would choose would be our own member deans about whose expertise we know a great deal, and who can be extremely useful consultants to other institutions. We have prepared a new informational brochure describing this service, and I hope that all of you will consider calling us when you need this type of consultation.

Just a word about our two research projects. You have heard at this meeting from Clif Conrad, our principal investigator, and Barbara Solomon, chair of the steering committee, for our project on the study of master's education. That is proceeding well, and most of this next year will be concerned with doing field studies and compiling material. The project is scheduled to be completed in 1991, and we will keep you apprised of the progress. Our other study, on the role and nature of the doctoral dissertation, has received funding from The Mellon Foundation in the amount of $25,000. This study is also under way, and the first meeting of those deans involved will take place in January of 1990, with the project scheduled to be completed by the end of the summer of that year. We will be reporting on this at our national meeting in 1990.

We have been paying particular attention this year to our dean in residence program in terms of trying to get more applications and nominations from the membership. As all of you know, this program is intended for deans, associate deans, or assistant deans, and enables the individuals chosen to spend ten months in the Washington office of CGS, participating in all of our activities and also working on problems of special interest to the participant. We try to maintain two deans in residence each year—one dealing primarily with minority issues, but also participating in all of the other activities of our office, and the other serving in a more general role. These deans in residence provide an invaluable service to our organization in extending our capabilities to provide answers to your questions and to help us develop and carry through projects. From what we hear from past and current deans in residence, it provides them an excellent experience in finding out about the Washington world of higher education, in terms of both the education associations and the political scene in Washington. Please feel free to contact any of our former deans in residence for more personalized descriptions of their experiences here; and if you know someone who may be interested in the position, or if you yourself are interested, please let us know.

Finally, I would like to talk for just a few moments about an issue that is becoming increasingly important to graduate schools and universities, and that has to do with the role of research in universities, and the role of research universities in technological and economic development in the United States. I should like to draw to your attention a relatively new publication entitled "Science and Technology in the Academic Enterprise: Status Trends and Issues" which is a discussion paper issued in October, 1989, by the Government-University-Industry Research Roundtable of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The report provides a fascinating exploration of the nature and status of the academic research enterprise, including very valuable information about what has been going on over the past thirty years. Among other things, the report points out that the decade of the eighties has been characterized by great expansion and diversification of the academic research enterprise, primarily in public universities and related to pressures for universities to participate in economic development at the state level, and in ensuring our economic competitiveness internationally. Recognizing this trend, the report raises a number of very basic questions about research in the university and, more broadly, about how a country uses universities to participate in the research necessary to maintain a technology-driven economy. One of the more provocative comments in the report, particularly for this audience, is the following: "While graduate education in the United States continues to include significant research components, what appears to have changed is the extent to which expanding academic research programs include instructional components." The report really questions the idea of universities moving away from considering research as part of the instructional activities of the institution, and raises a number of very pointed questions about the future of research in the university. I think all of us will be talking about this at various meetings during the next few years, and I draw this report to your attention because it provides the best background that I know in the subject.

Let me conclude be saying that I appreciuate the support, both financial and intellectual, provided by the members of the Council of Graduate Schools in all of our activities, and we will continue to do all that we can to justify your confidence in us.

The Council of Graduate Schools
Financial Report for Years Ended December 31, 1989 and 1988

We have engaged Grant Thornton, nationally recognized certified public accountants, 1850 M Street, N.W., Washington, D.C. 20036 to perform a review in 1989 and an audit in 1988 of the financial statements of The Council of Graduate Schools. Summarized financial data are provided below. This recapitulation is not a complete presentation of the reports of Grant Thornton and does not contain all the data and informative disclosures required by generally accepted accounting principles.

BALANCE SHEETS

Assets

	1989 (Reviewed)	1988 (Audited)
Current assets	$929,752	$871,045
Fixed assets, less accumulated depreciation	32,431	33,923
Endowment fund investments	18,012	18,012
	$980,195	$922,980

Liabilities and Fund Balances

	1989 (Reviewed)	1988 (Audited)
Current liabilities	$414,405	$379,046
Fund balances		
Unrestricted		
General operating fund	547,778	525,922
Restricted		
Endowment fund	18,012	18,012
Total fund balances	565,790	543,934
	$980,195	$922,980

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND BALANCES

	1989 (Reviewed)	1988 (Audited)
Revenue	$953,939	$792,006
Expenses		
Personnel	421,934	397,361
Research, meetings and travel	305,130	202,484
Office expenses	126,423	122,620
Gustave O. Arlt Award expense	1,941	3,163
Pew Grant Expense	76,655	–
	932,083	725,628
Excess of revenue over expenses	21,856	66,378
Fund balances at beginning of year	543,934	477,556
Fund balances at end of year	$565,790	$543,934

OTHER BUSINESS

Vote on Amendment to CGS Constitution

In accordance with Section 12 of the CGS Constitution, the members voted on and approved overwhelmingly the following amendment to the CGS constitution.

> *The level of membership dues shall be determined by the Board of Directors. The Board shall have authority to increase dues in any year by no more than 3 percent above the percentage increase in the Consumer Price Index (CPI) during the previous 12 month period. Larger dues increases must be approved by the majority of the membership voting after due notice. The Board of Directors' authority to increase dues is limited to five years; renewal of that authority requires approval by a majority of the members voting after due notice.*

This replaces Section 11 of the Constitution which had read as follows:

> *The amount(s) of membership dues shall be proposed by the Board of Directors and must be approved by the majority of the membership after due notice.*

A view of the membership during a business session discussion.

Luncheon

Thursday, November 30, 1989

PRESENTATION OF AWARDS

GUSTAVE O. ARLT AWARD IN THE HUMANITIES

Presented by: Catherine Lafarge, *Chairman of Arlt Award Committee and Dean of the Graduate School of Arts and Sciences, Bryn Mawr College*

The Gustave O. Arlt Award in the Humanities was presented to Dr. Sarah Deutsch in recognition of her book, *No Separate Refuge: Culture, Class and Gender on an Anglo-Hispanic Frontier in the American Southwest, 1880–1940.* Dr. Deutsch is Associate Professor of History at Clark University. Her book deals with culture clashes between Chicanos and Anglos in New Mexico and Colorado from the 1880s through the Depression. The Arlt Award in the Humanities is given to a young scholar teaching in the humanities who has earned the doctorate within the past five years (in the future this will be seven years), and published a book deemed to be of outstanding scholarly significance. This year the field of competition was American History.

Dr. Sarah Deutsch (second from left) recipient of the Gustave O. Arlt Award in the Humanities, is shown with Dr. Catherine Lafarge, Dean of the Graduate School of Arts and Sciences, Bryn Mawr College, and Chair of the Arlt Award Committee. On Dr. Deutsch's right is Dr. Jerome Pollitt, Dean of the Graduate School at Yale University from where she received her Ph.D. Also seen is Dr. S. Leslie Blatt, Dean of the Graduate School at Clark University where Dr. Deutsch is now on the faculty.

CGS/UNIVERSITY MICROFILMS INTERNATIONAL DISTINGUISHED DISSERTATION AWARD

Presented by: William H. Matchett, *Chairman of the CGS/UMI Award Committee, and Dean of Graduate School, New Mexico State University*

Dr. Jeffrey M. Werneke was the winner of the CGS/University Microfilms International Distinguished Dissertation Award. The field of competition for 1989 was biological sciences. Dr. Werneke's dissertation, which was judged as making a significant contribution to the discipline, is entitled: *Structure and Expression of Spinacea oleracea L. and Arabidopsis thaliana cDNAs Encoding Ribulosebisphosphate Carboxylase/oxygenase activase*. Dr. Werneke, who received his Ph.D. degree in Plant Pathology at the University of Illinois at Urbana-Champaign, is on the faculty there now in the Agronomy Department.

CGS/University Microfilms International Distinguished Dissertation Award winner, Jeffrey M. Werneke (second from right) is seen with Dr. William (Pete) Matchett (r.), dean of the Graduate School, New Mexico State University and Chair of the Dissertation Award Committee. To Dr. Werneke's right are John Riedel, Senior Vice President, University Microfilms International, and David Billick, Director, Dissertations Publishing At UMI.

PLENARY SESSION SPEAKERS

Stanley E. Collender
Director of Federal Budget Policy
Price Waterhouse
The Federal Deficit in the 1990s—
A Dilemma for Higher Education

Leonard L. Baird,
Professor, Department of Educational
Policy Studies and Evaluation
University of Kentucky
The Climate for Graduate Education:
Conflict of Interest and Interest in Conflict

Michael Gluck
Senior Analyst, Office of
Technology Assessment
U.S. Congress
The Climate for Graduate Education:
Conflict of Interest and Interest in Conflict

Plenary Session IV

Thursday, November 30, 1989

THE CLIMATE FOR GRADUATE EDUCATION: CONFLICT OF INTEREST AND INTEREST IN CONFLICT

Presiding: Jeanne Gullahorn, *Vice President for Research and Dean of Graduate Studies, SUNY-Albany*

Speaker: Leonard L. Baird, *Professor, Department of Educational Policy Studies and Evaluation, University of Kentucky*

Students, Scholars, and Stress: The Relationships between Graduate Students and Their Programs

Leonard L. Baird

A recent advertisement from the "Positions Available" section of the *Chronicle of Higher Education* ran as follows:

> Applications and nominations are invited for the position of Associate Vice President for Research and Dean of the Graduate School. The position is the chief representative of the University in matters of research and graduate studies. The position has overall responsibility for stimulating and facilitating funded research and sponsored programs and supervising the work of the Director of the Office of Research. As Dean of the Graduate School, the individual is responsible for the administration, development and review of graduate programs. Responsibilities include the development and implementation of policies and procedures covering contracts and grants, liaison with state and national funding agencies, stimulation of proposal development and submission, further development of graduate programs, curriculum change, recruitment of graduate students and matters pertaining to graduate faculty.

The announcement goes on to describe the qualifications for the position which include administrative experience with contracts and grants, dealing with funding agencies, and a record of personal research and publications. This particular ad is very typical of such job announcements, and describes the usual duties of graduate deans as they are defined today. What I would like to ask is this: "Where are the graduate students in this description?" Put another way, where is the job duty of promoting the academic progress and professional development of graduate students? Where, in this description of qualifications, is "demonstrated concern for the academic welfare of students pursuing advanced degrees?"

Now, you might argue, with some legitimacy, that these concerns fall in the purview of faculty, and that the position of graduate dean requires that great attention be paid to promoting faculty research. I would argue that the conflict between the emphasis on research and concern for students has, in many cases, become far too one-sided, with little active concern for students. I would also argue that the time has come for graduate deans to take a more active role in promoting student progress. The reasons for such a shift in emphasis are not hard to find, and include the following:

- The level of attrition in graduate education is high, and may be increasing.
- Among those who *do* stay in doctoral study, there is a growing number of ABDs.
- Even among those who do obtain their degrees, particularly doctoral degrees, the time taken to obtain the degree is increasing (Tuckman, in press).

Furthermore, there is a large and consistent research literature that indicates that the lives of graduate students are stressful in a variety of ways that may hinder their academic development (Baird, in press). I would like to summarize some of that research because I think it bears directly on our concern.

For example, some research has focused on the fact that graduate students often have other, nonacademic roles. They are workers, spouses, parents, citizens, and church members as well as students. The demands of these other roles in terms of time and energy may affect students' academic roles by placing limits on their ability to concentrate on, and receive satisfaction from academic study. However, as reported by many researchers, the demands of graduate school often affect other life decisions, and the quality of personal relations in turn. Thus, the interplay of students' multiple roles with the formal demands of academic work can lead to stresses both on campus and elsewhere that hinder their progress.

Turning more directly to the academic side of graduate students' lives, student development during graduate education has frequently been analyzed as a process of socialization to an ultimate professional role. Professional socialization has been defined by Bragg (1976) as ". . . socialization to a particular role in society, the role of the professional. It is the acquisition of the specialized knowledge, skills, attitudes, values, norms, and interests of the profession that the individual wishes to practice. The end product of successful professional socialization is professional identity." The graduate and professional school is the agency that carries out this socialization, but not always in a well-considered way, or a way that avoids unnecessary or dysfunctional stress. One way to see some of the stresses that may be "built in" to graduate study is to compare it with professional school study.

Professional schools have rather standardized and relatively clear demands. The curricula generally cover the same subjects across schools, the same texts are used and the same teaching styles prevail. For example, Meyers (1988) noted that ". . . in any given law school most of the students are doing the same thing: exactly the same thing in the first, much of the same in the second, and only marginally different things in the third year . . . not only do law students within any given law school do much the same thing, law students in every school are doing much the same thing." Most of the other professional curricula, certainly *within* institutions, such as dentistry, architecture, etc., are fairly standardized in terms of content and schedule. Successful completion of the programs usually depends on completion of course studies rather than an indeterminate requirement such as a dissertation. Likewise, the content of many professional programs involves specific, detailed knowledge. There is general agreement among professional educators about what a graduate of their program should know. Together these facts have led to a situation described as "academic lockstep" or "monolithic standards" by its critics, and "uniform fair requirements" by its defenders. The point is that, compared to graduate education, professional education is more uniform, less flexible, more structured in terms of timing of educational experiences, clearer in its demands, and less variable across programs.

What does this mean for the development of professional students? First, many of the tasks of professional students involve mastering a defined subject matter rather than interpreting it or identifying it. There is much more emphasis on being on schedule and on meeting standards. Classes in the early stages tend to be large lecture courses with little chance for close involvement with a professor.

In contrast, a major characteristic of graduate school is its flexibility and its consequent lack of specificity and clarity of expectations and demands. This lack can make some students spend several extra years of their lives in attempting to define and satisfy ambiguous demands and criteria of performance. Research indicates that the lack of clarity can also produce high, if unnecessary, degrees of stress among students, leading to actual or psychological withdrawal from graduate study. Other research studies suggest the role of the graduate student is difficult as well as stimulating. Sometimes there are few interpersonal relationships with either faculty or other students. This lack of successful relationships can be especially stressful to students with high needs for such contact, leading to feelings of isolation, resentment, and competition. Conversely, the graduate school system sometimes seems to recruit people into academic fields who have little concern for others and their needs, who value chiefly academic attainment. Thus, graduate schools may be fostering a perpetual lack of concern with people and their feelings among the next generation of scholars. One of the consequences of this impersonality is to foster rivalry among students for the attention and approval of the faculty, further accentuating the sense of competition and isolation rather than colleagueship and cooperation among students.

In recent years, research has confirmed and strengthened these conclusions about the graduate school experience, but the focus of research has tended to shift to particular issues, especially the role of gender. Part of a growing body of research on women in higher education, research on women in graduate school has focused on three major topics: admission, interactions with faculty, and the overall experience. Without going into detail, these studies, taken together, suggest that the graduate school experience may differ for men and women in both levels and sources of stress.

The generalizations I have just reported are based on a good deal of research, which I have recently reviewed in a long—perhaps overly long—chapter in a book on Higher Education (Baird, in press), and I hope they can provide some perspectives for our thinking. However, since one of the concerns of this session is the changing climate of graduate education, it may be useful to consider how the picture presented by these generalizations is changing.

Although the traditional image of graduate students is that of chemistry or English students preparing for scholarly careers, the fact is that the majority of students are pursuing pragmatic career-related educations in such fields as computer science and education (fewer than one in five is in a traditional arts and science field). Most frequently a master's degree is the goal (about three out of four students pursue the master's), as reported in the *Digest of Educational Statistics*. The trends suggest these figures will grow. These facts are reflected in students' motivations for attending graduate or professional school, which some research suggests are most often a fusion of their recognition of society's demand for credentials and their own desire for competence as reflected in increased knowledge, skills and abilities (Stodt and Theilens, 1985). Partly because of this mixture of pragmatism and interest, students pursue a bewildering variety of degrees, ranging from the A.M.Ed. (Advanced Masters of Education) through the M.S.Cer.E. (Master of Science in Ceramic Engineering) to the S.S.P.A. (Specialist in Speech Pathology). There are over 300 kinds of advanced degrees reflecting the variety of pragmatic concerns. Consistent with their concerns, most students pursue their studies in the most convenient and cheapest institutions.

Perhaps due to the rising costs of graduate education, combined with curtailments in financial aid and reductions in the number of research and teaching assistantships, students are about as likely to be attending part time as full time. Increasingly, the primary source of income seems to be either a job outside the university or the job of a spouse. This is complicated by the fact that about two-thirds are, or have been, married, and four in ten have children. Thus, most have substantial adult responsibilities.

Consider being one of these increasingly common students, and the consequences of being so. A student who works full time or close to it and who pursues part-time studies faces a variety of strains. First is the simple and obvious difficulty of finding time and energy to meet the demands of several competing roles: employee, spouse, parent, and student. Frequently there may also be financial problems. Furthermore, the student who concentrates on his or her studies may not be able to give work duties sufficient attention to obtain raises or promotions. This would probably be especially true for those who decide to combine part-time work with part-time study. There are also often strains on marriages and relationships, as various researchers have pointed out.

More subtle problems revealed by several studies include the sense of isolation that being a "marginal" person entails. For example, it may be difficult for the student to share his or her academic interests and concerns with coworkers on the job. Likewise, the part-time or working student may feel like an outsider when interacting with other full-time students. Thus, it may be hard to develop strong friendships either on the job or in school, and loneliness may be a problem. In addition, the part-time or working student may feel handicapped in competition with full-time students perhaps leading to a lower level of performance and feelings of inadequacy.

A problem faced by many graduate students, but especially the part-time student, full-time worker, is the discontinuity between the student role and other roles. A person who, in all other respects performs and is respected as a mature adult is treated as one who is not autonomous and, in some senses, not mature enough to guide his or her own destiny as a student. This situation can create considerable psychological conflict. All of these conflicts and pressures may weigh especially heavily on women and minority students.

Another trend in universities is an increase in the emphasis on faculty research performance. There is evidence that, in many disciplines, a professor who hopes to be just "average" now has to publish as much as a professor considered very productive ten or fifteen years ago (Bieber and Blackburn, 1989). Thus, graduate faculty will, of necessity, be more and more concerned with obtaining research funding and publishing. Given the finite number of hours in a day, there is simply less time for faculty to spend advising students and directing their work. This situation may be aggravated by the kinds of industrial involvement in research discussed by Michael Glock. This means that students' uncertainties about their programs and research projects will increase. Furthermore, since the reward structure in most departments is heavily in favor of research, the time and care spent on teaching may suffer, leaving students to conclude that they are not being taken as seriously as they feel they should be.

A further, and perhaps more fundamental change lies in the rapid movement of knowledge and ideas in disciplines. Thus, not only is the *amount* of knowledge increasing, but the *ideas* to understand, interpret and use the knowledge are changing rapidly. In many fields, the basic paradigms of the disciplines are in a state of flux. The consequences for students are that it is more difficult to define and master their fields.

In sum, it appears that the picture of the life of the graduate student obtained from past research may, like the Portrait of Dorian Gray, become grimmer and more full of stress, (while, at the same time, Dorian the Faculty Researcher remains forever young).

At this point, you may be at least partly convinced that the life of the graduate student is often stressful, and that many of the sources of stress are part and parcel of graduate education. However, you may rightly ask, I think, about the extent to which the graduate school has responsibility for these stresses, or even whether the graduate school *can* do anything to alleviate them. I would argue that, as part of its responsibilities in reviewing graduate programs and the progress of graduate students, the graduate school should play a *proactive* role in helping programs identify dysfunctional practices and helping students make the best use of both their and their institutions' time and resources. In programmatic terms, the graduate school should be concerned not only with attracting and encouraging bright, committed students, but also should be concerned with ensuring their attainment of degrees and shortening their time in graduate school (by the way, also lengthening the time they may serve as active scholars, researchers, and professionals in academe and the general society).

As to the second question of what the graduate school can do, I would like to mention the example of the University of California at Berkeley (Nerad and Cerny, 1989). Beginning with a concern with the length of doctoral study, the Berkeley graduate school has made a series of recommendations. Although many of them are yet to be implemented, they suggest the realistic range of activities that a graduate school might consider. They include:

> Developing guidelines for newly-appointed faculty on how to supervise the dissertation process;
>
> Increasing the educational role of the Graduate Division by sponsoring workshops of general concern to graduate students (for example, preparing for the qualifying exam, writing grant proposals and other approaches to financing the dissertation, practical advice for writing a dissertation, job hunting). They note, "We believe that sponsorship by the Graduate Division will broaden the appeal of these workshops and provide better advertising of the events";
>
> Developing a comprehensive, "generic" graduate student handbook on all phases of graduate study and distributing it to all graduate students, not only new ones. Making support available for advanced graduate students to modify the handbook according to their department;
>
> Developing incentives for faculty to seek more vigorously external support for *research assistantships* that would provide for more interaction with their students;
>
> Developing an exit questionnnaire for graduating doctoral students asking them about their experiences and suggestions for improvements. Analyzing data on student progress (completion rate, drop-out rate, average time to degree) at regular intervals, communicating to departments the results of both the exit questionnaires and the data analysis on student progress;
>
> Distributing to departments a list of factors that have been identified as contributing to successful completion of the degree, to be used as a tool for self-study;
>
> Collecting information on successful departmental activities (e.g., brown-bag lunch meetings for new doctoral students where faculty present their areas of research, an annual graduate student conference, an annual weekend retreat, picnics, a speaker series arranged

by students) and make this available to other departments.

(They also make recommendations for departments, but some of them may be beyond the scope of the graduate school.)

I would like to add my own suggestions, which would include the following:

Encourage faculty to write in funding for research assistantships in their proposals for grants or contracts;

Provide more rewards for faculty who advise students and who guide dissertations;

Take graduate student housing seriously, and cooperate with the student services staff;

Seek ways to help part-time students become more involved with university life;

These ideas suggest just some of the ways in which graduate schools can take a more active role in the promotion of the academic progress of graduate students. To me, they seem quite feasible. The only thing *needed* is to give the education of graduate students as much attention, time, and resources as is now given to obtaining and administering research grants.

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PLENARY SESSION SPEAKERS

Shaping a Public View of Graduate Education

Anthony Flint
Boston Globe

Karen Winkler
Chronicle of Higher Education

Lee Daniels
New York Times

Plenary Session V

Friday, December 1, 1989

NEW APPROACHES TO THE GRE

Presiding: Richard Attiyeh, *Dean of Graduate Studies and Research, University of California, San Diego*

Speaker: Charlotte V. Kuh, *Executive Director, Graduate Record Examinations Program*

Panel of Graduate Deans:
Wilson G. Bradshaw, *Dean, Graduate Studies, Florida Atlantic University*
Patricia B. Swan, *Vice Provost and Dean, Graduate School, Iowa State University*
Mary G. Powers, *Dean, GSAS and Arts and Science Faculty, Fordham University*
John K. Yost, *Vice Chancellor for Research and Dean of Graduate Studies, University of Nebraska-Lincoln*

Charlotte V. Kuh

Admissions testing is rarely an area of great concern to graduate deans. Admissions committees are the users of test scores and the graduate dean generally gets involved only in cases where applicants contend test scores were misused or when the dean is trying to increase minority or female admissions in the face of faculty who equate high test scores with high standards. For the next few years, the GRE Board would like to reinvolve the deaconate in questions of testing: how tests are used now and how testing could be made more helpful to the graduate community.

I am not going to use this opportunity to talk about score use, although the Board has recently approved new Guidelines, which most of you should have received, which provide significantly improved guidance on this topic. Later, I'd be happy to answer questions about our new guidelines. I would like to spend most of my time talking about how testing fits into the bigger picture of admissions now and about some of the alternatives that we are considering for the future.

Where are we now? The verbal and quantitative measures on the GRE General Test have been what they are now for almost forty years. Most people in this room have probably experienced those tests at some point in their lives. They, and the newer analytical measure, all consist of timed sections composed of multiple choice items delivered via paper and pencil. I won't be giving away any secret to the coaching schools if I say that the questions are arranged by broad range of difficulty for each type of question. This isn't very efficient testing, in terms of use of the examinee's time. Students who will end up with high scores are asked to breeze through a lot of questions that they find easy. Students who will end up with low scores struggle with questions that they find very difficult. Such inappropriately matched questions add nothing to the measurement that the test is intended to obtain. Furthermore, all the questions are multiple choice. The student who is quick to recognize the right answer has an advantage.

There's nothing inherently wrong with this kind of testing. For a reasonable cost, the tests measure reasoning skills that are important to graduate study. We know this both from expert opinion and from validity studies. All three GRE measures explain about as much of the variance in first year graduate grades as do undergraduate grades, which is the other easily quantifiable item in the admissions folder. All these measures taken together, which is the proper way to use test scores, explain about 10% to 15% of the variance in first year grades. In many fields, if you add the score on the GRE subject test, you can explain 20% to 25% of this variance.

So why should we be rethinking the GRE tests? The reasons result from advances in the discipline of psychological measurement, declining costs of information processing technology and from forces, both present and anticipated, that will have an impact on graduate education.

Let's start with some things that will be affecting graduate education. In the area of doctoral education, two recent books on academia, one by Howard Bowen and Jack Schuster[1], the other by William Bowen and Julie Ann Sosa[2], forecast a resurgence in demand for new faculty in the next ten to fifteen years. This resurgence is not just in the sciences and engineering but also in the humanities. It is driven not only by retirements but also by the echo of the baby boom reaching college-going age. The across-the-board nature of this anticipated increase is important, because in recent years growth of academic jobs has focused lopsidedly on the sciences.

This growth of demand comes after a period of decline in graduate school attendance by American students. It is not established that professional schools have been taking the best and the brightest, but they have certainly been taking a larger share of post-baccalaureate students than they did twenty years ago.

The anticipated growth in demand is not limited to doctoral programs. As our economy has become increasingly technologically-based, the demand for people with master's degrees has also grown. Further, with the growing professionalization of teaching, there is a growing demand for master's level professional education for teachers.

Now, what does this mean for graduate admissions? To expand the numbers of graduates, a graduate department has either to increase the number of people it admits or increase the completion rate of those admits or some combination of the two. Either of these strategies has implications for assessment for admissions. If you are going to admit *more* students, you either have to dip more deeply into the existing pool of applicants or you have to expand the pool. If you are going to increase completion rates, you have to find better ways of identifying those who are likely to finish, as well as putting more resources into students once they are admitted. It is possible that admissions testing can help in both these areas, but it can help only if graduate departments become more *mindful* of what they are doing when they consider students for admission. It will then be possible to enter into a dialogue about the sorts of testing that graduate departments *desire* and the sorts of testing that GRE can provide at reasonable cost.

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[1] *American Professors: A National Resource Imperiled*. New York, 1986.

[2] *Prospects for Faculty in The Arts and Sciences*. Princeton, 1989.

Now let's look at testing. First, conceptually, what would we like new kinds of testing to accomplish to help graduate education become more productive? I would submit that it could help by *broadening the definition of talent*. Many faculty who do admissions still view the GRE as a sort of I.Q. test that identifies innately smart people, who, of course, are much more likely to succeed in graduate school. Both parts of this view are wrong: the General Test tests developed reasoning abilities—these abilities can't be developed in a few weeks, but they can be developed over time through education. Nor are these abilities the only ones needed to succeed in creativity—to name a few important and non-assessed characteristics of successful graduate students. Thus, over-reliance on test scores, although it may minimize the chance of admitting a student who will fail, may also result in lots of Type II errors—rejecting applicants who might have succeeded. Testing can diagnose remediable problems in the cognitive domain. Testing could be used to assist faculty to think more broadly about who might succeed in their program. Further, if testing were demystified more for students—if it were viewed more as a counseling device than an obstacle—examinees might find it more helpful.

After that fairly lengthy introduction, let's look at some new possibilities that are being considered by the GRE Board and explored by the program.

If we are going to get away from tests that are limited to paper and pencil delivery or to the multiple choice format, we need to develop the "enabling technologies" to make those moves. There are two principal ones: computerized adaptive testing and productive response questions. These technologies are independent in the sense that neither one necessarily includes or excludes the other. Let me describe briefly each technology and the sense in which it is enabling.

Computerized Adaptive Testing. As the name implies, this is an examination delivered by computer. It is assumed that students do not have any knowledge of computers. The minimal knowledge they need—how to move a cursor around and how to register an answer—is taught at the time the examination is administered. What is new is the adaptive nature of the test. An examinee is presented a few screening questions at the beginning of a section. On the basis of these answers, the program estimates a range in which the examinee's score will fall. Subsequent questions are designed to hone in on a score within that range. thus, the examinee faces a challenging test that lacks either terribly hard or ridiculously easy questions. The test can be shorter because no time is taken up with such extraneous questions. Furthermore, if the GRE Board approves, it is likely that the examinee can receive an *unofficial* score report upon completing the exam.

Right now, we are developing a computerized adaptive version of the existing GRE General Test. It will be field-tested in 1991 and, if all goes well, could become operational on a small scale two years later. In the field tests, we will try to ascertain whether such a test really is comparable to the paper and pencil test and assure ourselves that it doesn't put at a disadvantage any particular group of examinees defined by field, sex, or minority status.

Computerized adaptive testing, however, is really the old GRE in more efficient clothing. It isn't, we hope, measuring anything new or different. For that, we can go in two directions, one involving getting away from multiple choice, the other involving testing that is different not only in form but also in what is tested. Getting away from multiple choice involves learning the characteristics of another "enabling technology" that testmakers call "productive response."

Productive Response. These kinds of questions can be incorporated into a paper and pencil test. The simplest kind of productive response question is to ask an examinee to write in the answer to a math problem or to underline an incorrect usage of a word in a paragraph. These kinds of questions have the great advantage of face validity. After all, the graduate student rarely has problems posed in multiple choice format. On the other hand, tests containing such questions are expensive to score, unless scoring can be automated, and it is not clear what they add to measurement.

On the technological side, digitization of images and image readers may make automated scoring possible for non-numerical answers. However, once you get away from questions with short and unambiguous answers, you have to allow for partial credit scoring. Now we have to ascertain the psychometric characteristics of these kinds of questions. You may say that professors give these sorts of questions all the time on class examinations, but they don't give them to thousands of people who can think of justifications for answers that the examiners never intended to elicit. Classroom tests are not "standardized" and standardization and the power to compare students from a variety of institutions is a strong point of the GRE that we don't want to lose.

Of course, the most extreme type of productive response question is an essay. An essay as part of the GRE General Test could be used to assess writing ability and, within a broad field, it could be used to evaluate the examinee's ability to state and support an argument, for example. The GRE Board has asked us to look into the feasibility of incorporating an essay as part of the GRE General Test and many of you may have recently received a letter requesting you to distribute questionnaires about a possible essay section to different departments. At the very least, an essay is a writing sample obtained under controlled conditions. Even if we didn't score it, it would provide an admissions committee a sample of the applicant's writing which, with reasonable certainty, was written by the applicant. ETS has a number of other examinations that contain essays and now has standardized "holistic" scoring that permits reliable grading of the essays by human readers. We are asking your departments whether they want a graded or an ungraded essay and whether they want the subject of the essay to be field specific.

A more distant possibility is adding an essay section to the Subject Tests. This is relatively straightforward and is already done in the Advanced Placement program. Most subject tests, however, are relatively low volume and we would have to learn from you how valuable the graduate programs would find essay questions, since they would be considerably more expensive to grade than the current examinations. The revised Music Test is our first foray into human-scored Subject Tests (although the readers will be scoring musical notation, not an essay) and we hope that the increase in usefulness of the test will result in increases in volume that will make this experiment economically, as well as substantively, successful.

Field Specificity is another direction of exploration for the new GRE. Students who apply to graduate school are, after all, applying to particular programs. Would it be helpful to receive the results of assessment of verbal reasoning (vocabulary, reading comprehension) within the applicant's broad field, rather than generally (or at least balanced across fields) as our current verbal measure is designed? I can see pluses and minuses to this. On the plus side, you might want to see how an applicant does when working in the most comfortable language of discourse. On the other hand, even specialists need to communicate occasionally with non-specialists and general verbal reasoning skills are required to do that. Perhaps both measures would be helpful. Field-specific questions can be either multiple choice or productive response. Such tests, however, would probably have to be delivered as a modular part of a computerized test, since the logistics of a paper and pencil version are very complex.

Another immediate direction that we are exploring, which might be an option on the General Test or a separate subject test, recognizes that a number of non-mathematics fields in the sciences and social sciences use mathematics at a fairly advanced level but a level below that needed to assess the knowledge of an aspiring mathematician. This sort of test of what we are currently calling college level achievement in mathematics could be used, either in the admissions process or diagnostically, to identify tools that a student may need to pick up before undertaking advanced courses.

These possibilities that I have just discussed should serve an an introduction to what the Board has been considering. They are not the only possibilities, but they seem to be natural extensions of the current examination program. But now let me bring you back to what new testing initiatives should accomplish in the broader context of admissions. Will they help you identify those who are now your Type II errors? Will they help you identify students who are more likely to finish your program? Will they result in a broadening of the definition of talent? We don't know yet; but if new tests simply identify promise in the same people as the old tests did, then the considerable costs of development will hardly have been justified.

The GRE program is exploring some of these possibilities for feasibility. But there is a large gap between feasibility and implementation. We are not in the business of making tests that aren't used. We rely on you to help us ascertain usefulness. We hope that in the next decade the pressure to increase enrollment will result in departments becoming more mindful of the admissions process and of the role of testing, both as it exists and as it might exist, in that process.

In the next few years, we will be asking you to write to us, to distribute questionnaires, and to invite us to your campuses. The generic kinds of questions that we will be asking are.

— How do you use tests in admissions? Are they used differently for doctoral than for master's programs?

— How do tests track student success beyond first year grades? We need to know if you feel that testing is somehow identifying the wrong people.

— What happens to your "long shot" admits, that is, those whom you admit who have low test scores. How do you pick them? What do you do for them to help them succeed?

— Given the multiple and sometimes conflicting objectives of improving retention rates, completion rates, and enhancing diversity, which of our possibilities, or possibilities we haven't thought of, seem attractive?

These questions may all look as though they should be addressed to department admissions committees, but as we struggle to find the answers, we need your support and advice in obtaining the help of those directly concerned with admissions. Further, we wouldn't be spending our time or the program's money on this, if the Board were not convinced that graduate education as a whole may benefit from a possible new GRE. We value your opinions and we invite you to join us in this endeavor.

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(as revised August, 1987)

1. Name

This organization shall be called the Council of Graduate Schools, hereinafter referred to as the "Council."

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The Council is established to provide graduate schools with a comprehensive and widely representative body through which to counsel and act together.

Its purpose is the improvement and advancement of graduate education. The purview of the Council includes all matters germane to this purpose. The Council shall act to examine needs, ascertain best practices and procedures, and render assistance as indicated; it may initiate research for the furthering of the purpose. It shall provide a forum for the consideration of problems and their solutions, and in meetings, conferences, and publications shall define needs and seek means of satisying them in the best interests of graduate education. In this function the Council may act in accordance with the needs of the times and particular situations to disseminate to the public, to institutions, to foundations, to federal, state, and local governments, and other groups whose interest or support is deemed of concern, information relating to the needs of graduate education and the best manner of satisfying them.

In the analysis of graduate education, in the indication of desirable revision and further development, in the representation of needs and all other functions related to effecting its purpose, the Council not only shall be free to act as an initiating body, but it shall assume direct obligation for so doing.

3. Membership

Membership in the Council of Graduate Schools shall be in the following categories: Regular, Sustaining, and Contributing. All members shall be aware that the Council is devoted to excellence in graduate education as interpreted by occasional position statements outlining philosophies, policies, and procedures of graduate education. Applicants for membership must demonstrate continuing commitment to and support of graduate eduation, and shall display evidence of qualifications as prescribed by the Council. All applications will be reviewed and evaluated by the Council's Membership Committee, which will bring its recommendations to the Executive Committee for action.

A. *Regular Membership.* Institutions of higher education in the United States and its territories and Canada that are significantly engaged in graduate education, research, and scholarship, and the preparation of candidates for advanced degrees are eligible for Regular Membership. Applicant institutions must already have been approved to offer graduate work by the appropriate regional/provincial accrediting authorities, and shall have awarded a total of at least thirty master's degrees or ten doctoral degrees (or combination thereof) in at least three distinct and separate fields or disciplines within the three years immediately prior to the date of application. Applicant institutions must also have a formally organized administrative unit responsible for graduate affairs.

B. *Sustaining and Contributing Membership.* Profit and nonprofit organizations such as research institutes; testing and evaluation corporations; philanthropic and charitable organizations; federal, regional, and state agencies; public and private research and development corporations that are committed to fostering graduate education and research and that support the objectives of the Council may be eligible to become sustaining or contributing members. Such organizations must recognize the value of quality graduate education across a broad range of scholarly, technologial, and creative endeavors. Through their participation and financial contributions they help the Council carry out its central mission and purpose, while gaining access to its resources and activities. Levels of contribution for sustaining and contributing members shall be set by the Board of Directors.

Members in all categories shall be listed (separately and/or so designated) in the CGS Membership Directory, and receive the same generally distributed information and mailings.

Regular, Sustaining, and Contributing Members may attend CGS meetings and other sponsored functions. However, Sustaining and Contributing Members shall not have voting rights nor be eligible to hold elected or appointed offices in CGS. The Council neither endorses nor represents the interests of Sustaining or Contributing Members.

4. Voting Power

In all activities of the Council, each regular member institution shall have one vote. More than one representative of any institution may attend the meeting of the Council, but the vote of the member institution shall be cast by the individual designated by the chief administrative officer of the member institution as the principal representative of the institution.

5. **Officers and Board of Directors**

There shall be a Board of Directors of twelve voting members, composed of the Chairman, the Chairman-Elect, the Past Chairman, and nine members-at-large. Three members-at-large shall be elected annually by the members of the Council in the manner specified in Article 8 for terms of three years that begin immediately after the Annual Meeting. CGS regional affiliates are provided formal Board participation as specified in Bylaw 7.

The Chairman-Elect, chosen by the Board of Directors from its own past or present membership, shall serve in that capacity for one year. The following year the Chairman-Elect will assume the office of Chairman, and the following year, the office of Past Chairman. In the absence of the Chairman, the Chairman-Elect shall be presiding officer of the Board of Directors and the Council.

Each voting member of the Board of Directors must be the principal representative of an institutional member of the Council and none may serve for two consecutive full terms.

If the Chairman is unable to continue in office, the Chairman-Elect shall succeed immediately to the Chairmanship, and the Board of Directors shall choose a new Chairman-Elect.

Any vacancy occurring among the membership-at-large of the Board of Directors shall be filled in the manner specified in Article 8. In the interim, the position shall be filled by an appointee of the Board of Directors.

6. **Executive Officers**

The chief executive officer of the Council shall be a President, who shall be a salaried officer, appointed by the Board of Directors and serving at its pleasure. The President shall serve as an ex-officio member of the Board of Directors without a vote.

7. **Duties and Powers of the Board of Directors**

In addition to the duties and powers vested in the Board of Directors elsewhere in this Constitution, the Board of Directors may specifically employ such staff and establish such offices as may seem necessary; incorporate; undertake itself, or through its agents, to raise funds for the Council and to accept and expend monies for the Council; take initiative and act for the Council in all matters including matters of policy and public statement except where limited by this Constitution or by actions of the Council.

8. **Committees**

In addition to the Board of Directors, there shall be an Executive Committee of the Board of Directors, a Nominating Committee, a Committee on Membership (whose members shall not be members of the Board of Directors), and such other standing committees as may be established by the

Board of Directors.

Except for the Executive Committee and the Nominating Committee, all standing committees and ad hoc committees shall be appointed by the Chairman with the advice and consent of the Board of Directors. All committees shall be chaired by regular members of the Council.

The Executive Committee shall consist of the Chairman, Past Chairman, Chairman-Elect, and two other Board members elected annually by the Board of Directors. The President of the Council shall be an ex-officio member of the Executive Committee.

To the extent determined by the Board, the Executive Committee shall have the authority of the Board in the management of the affairs of the Council in the intervals between meetings of the Board. The actions of the Executive Committee shall be reported at the next meeting of the Board of Directors.

The Nominating Committee shall consist of five new members each year, three of whom shall be elected by the members of the Council. Two shall be members of the Board of Directors. The Chairman of the Committee shall be the Past Chairman of the Board. The one other Board member shall be elected by the Board from its members-at-large who are in the last year of their terms.

At least sixty-one days before each Annual Meeting of the Council, the Nominating Committee shall propose to the members of the Council two nominees for each member-at-large position of the Board of Directors to be filled, including residual terms of vacated positions, and two nominees for each member-at-large position of the Nominating Committee. These nominations shall be made only after suggestions accompanied by supporting vitae have been solicited from the membership-at-large.

The election shall then be held by mail ballot and the nominees receiving the larger numbers of votes for the positions to be filled shall be declared elected. In case of a tie vote, the Nominating Committee shall break the tie.

9. Meetings

The Council shall hold an Annual Meeting at a time and place determined by the Board of Directors. The Council may meet at other times on call of the Board of Directors.

The Board of Directors shall be responsible for the agenda for meetings of the Council. Reports and proposals to be submitted for action by the Council shall be filed with the Board of Directors before they may be submitted for general discussion by the Council. No legitimate report or proposal may be blocked from presentation to the Council, but action on any proposal may not be taken until the Board of Directors has had an opportunity to make a recommendation.

In matters not provided for in this Constitution, parliamentary procedure shall be governed by Robert's Rules of Order, Revised.

10. Limitations of Powers

No act of the Council shall be held to control the policy or line of action of any member institution.

11. Dues

The amount(s) of membership dues shall be proposed by the Board of Directors and must be approved by the majority of the membership after due notice.

12. Amendments

Amendments to this Constitution may be proposed by the Board of Directors or by written petition of at least one-third of the members. However they originate, proposals for amendments shall be received by the Board of Directors and forwarded with recommendations to the members, in writing, at least ninety days before the meeting at which they are to be voted upon or before formal submission to the members for a mail ballot. To be adopted, proposed amendments must receive the approval of a two-thirds majority of the members voting at the announced meeting or on the designated mail ballot.

13. Bylaws

Bylaws may be established by the Board of Directors at any regular or special meeting, subject to ratification by a simple majority vote of the Council at the next Annual Meeting.

BYLAWS

1. In conformity with Article 6 of the Constitution, the President of the Council of Graduate Schools shall be paid an annual salary to be determined by the Board of Directors plus such perquisites as may be necessary for the proper conduct of the office and such travel as may be deemed essential. The President is authorized to employ such personnel as necessary for the proper conduct of the office, to establish bank accounts in the name of the Council of Graduate Schools, and to draw checks and invest monies against the Council's account or accounts, subject to an annual audit of the books of the Council by a Certified Public Accountant and approval by the Board of Directors.
2. Depositories for funds of the Council shall be designated by the Board of Directors.
3. In the event of the dissolution of the Council of Graduate Schools, all then existing assets of the Council shall be distributed in equal parts to the institutions that will at the time be members of the Council.
4. The fiscal year of the Council shall correspond to the calendar year.
5. In the event of the death or disability of the President of the Council, the Chairman shall immediately call a meeting of the Board of Directors to select an Acting President, who shall assume the responsibilities of the President, as they are specified in Article 6 of the Constitution and in Bylaws 1 and 2, until the appointment of a new President.
6. Applications for Regular Membership must include statements endorsed by the chief executive officer and the chief graduate officer of the applicant institution. These statements shall include information as to the following:
    a) The institution's accreditation for graduate work as determined by the appropriate regional or provincial accrediting authority.
    b) The number of graduate degrees awarded in the three years immediately preceding the application for each applicable field or discipline in which graduate degrees are awarded.
    c) A general description of the criteria used in determining faculty participation in graduate programs, i.e., the level of training and the scholarly/creative productivity of the faculty members in the institution's graduate program.
    d) The degree of centrality of graduate education to the nature and purpose of the institution as evidenced by its budgetary commitment to graduate programs, the existence of special facilities or resources in specific support of graduate education, and, in the case of appointments, promotion, and tenure, the degree of importance placed on faculty contributions to graduate and scholarly/creative work.
    e) The extent of the institution's acceptance of existing Council policy statements setting forth standards for the organization of graduate study.

7. A regional organization of graduate schools that becomes associated with the Council of Graduate Schools shall be known as CGS affiliate. Eligibility for CGS affiliate status is limited to a) existing regional organizations of graduate schools, or b) any such organizations subsequently established and having membership of at least fifty institutions. An eligible organization becomes a CGS affiliate upon approval by CGS's Board of Directors of a letter from a duly authorized officer of that organization stating its intent to become an affiliate. No fee is required to become a CGS affiliate.

   Formal participation of the regional associations in CGS is provided by liaison representatives to the CGS Board. Each regional association will designate a member to serve in that capacity. In the event that the liaison representative is already a member of the CGS Board, that individual will serve in a dual capacity. The appointment of a liaison representative does not preclude direct communication between CGS and officers of the affiliates. In determining any joint position held by CGS and its affiliates, the governing bodies of each must have adopted such a position using their own procedures. When agreement has been reached, CGS shall be able to represent the position as one held in common by CGS and its affiliates. Article 10 of the Constitution of CGS shall apply to any such determination.

PROCEDURAL POLICIES

1. Annual meetings of the Council shall be held during or near the first week of December.
2. If a member resigns, it must reapply for admission in the normal way if it wishes to resume membership.
3. Institutions accepted to membership in any given year shall be required to pay prorated dues on a quarterly basis for that fiscal year.

Alphabetical Listing of Regular Member Institutions

Abilene Christian University
Adelphi University
Air Force Institute of Technology
Alfred University
*American University
Andrews University
Angelo State University
Appalachian State University
Arizona State University
Arkansas State University
Assumption College
Auburn University
Austin Peay State University
Ball State University
Baylor College of Medicine
Baylor University
Bentley College
Boston College
*Boston University
Bowie State University
Bowling Green State University
Bradley University
*Brandeis University
Bridgewater State College
Brigham Young University
Brooklyn College of CUNY
*Brown University
*Bryn Mawr College
*California Institute of Technology
California State Polytechnic University, Pomona
California State University, Bakersfield
California State University, Chico
California State University, Fresno
California State University, Hayward
California State University, Long Beach
California State University, Los Angeles
California State University, Northridge
California State University, Sacramento
California State University, San Bernardino
California University of Pennsylvania
*Carnegie-Mellon University
*Case Western Reserve University
*Catholic University of America
Central Michigan University
Central State University
Central Washington University
City College of the City University of New York
City University of New York Graduate School & University Center
*Claremont Graduate School
*Clark University
Clarkson University
Clemson University
Cleveland State University
College of New Rochelle
College of Notre Dame
College of Saint Rose
College of William and Mary
Colorado School of Mines
Colorado State University
*Columbia University
Concordia University
*Cornell University
Creighton University
Dartmouth College
Drake University
Drew University
Drexel University
*Duke University
Duquesne University
East Carolina University
East Central University
East Tennessee State University
East Texas State University
Eastern Illinois University
Eastern Kentucky University
Eastern Michigan University
Eastern Washington University
Emerson College
*Emory University
Emporia State University
Fairleigh Dickinson University
Fielding Institute

Fitchburg State College
Florida A&M University
Florida Atlantic University
Florida International University
*Florida State University
*Fordham University
Fort Hays State University
Framingham State College
Gallaudet University
Gannon University
George Mason University
*George Washington University
*Georgetown University
*Georgia Institute of Technology
Georgia Southern College
Georgia State University
Hahnemann University
Hampton University
*Harvard University
Hebrew Union College-Jewish Institute of Religion
Hofstra University
Holy Names College
Howard University
Idaho State University
*Illinois Institute of Technology
Illinois State University
Indiana State University
Indiana University
*Indiana University of Pennsylvania
Inter American University of Puerto Rico
*Iowa State University
Jackson State University
James Madison University
John Carroll University
John Jay College of Criminal Justice
*Johns Hopkins University
*Kansas State University
Kent State University
Lamar University
*Lehigh University
Lesley College
Loma Linda University
*Louisiana State University and A&M College
Louisiana State University Medical Center School of Graduate Studies
Loyola Marymount University
*Loyola University of Chicago
Mankato State University
Marquette University
Marshall University
*Massachusetts Institute of Technology
McGill University
Medical College of Georgia
Medical College of Ohio
Medical College of Pennsylvania
Medical College of Wisconsin
Medical University of South Carolina
Memphis State University
Miami University
*Michigan State University
Michigan Technological University
Middle Tennessee State University
Mississippi State University
Montana State University
Montclair State College
Morehead State University
Morgan State University
Murray State University
Naval Postgraduate School
New Jersey Institute of Technology
New Mexico State University
*New School for Social Research
New York Institute of Technology
New York Medical College
*New York University
North Carolina Agricultural & Technical State University
North Carolina Central University
*North Carolina State University at Raleigh
North Dakota State University
Northeast Missouri State University
Northeastern Illinois University
Northeastern University
Northern Arizona University
Northern Illinois University
Northern Michigan University
Northwestern State University of Louisiana
*Northwestern University
Nova University
Oakland University
*Ohio State University, The
Ohio University

*Oklahoma State University
Old Dominion University
*Oregon State University
Pace University
*Pennsylvania State University
*Pepperdine University
Pittsburg State University
Polytechnic University
*Princeton University
*Purdue University
Queens College of the City University of New York
Radford University
*Rensselaer Polytechnic Institute
Rhode Island College
*Rice University
Rochester Institute of Technology
*Rockefeller University
Rutgers University, Newark Campus
*Rutgers-The State University
Salisbury State College
San Diego State University
San Francisco State University
San Jose State University
Sangamon State University
Santa Clara University
Sarah Lawrence College
Seattle University
Shippensburg University
South Carolina State College
South Dakota School of Mines & Technology
South Dakota State University
Southern Illinois University at Carbondale
Southern Illinois University at Edwardsville
Southern Methodist University
Southern University
Southwest Missouri State University
Southwest Texas State University
Spalding University
St. Bonaventure University
*St. John's University
*St. Louis University
*Stanford University
State University of New York at Albany
State University of New York at Binghamton
*State University of New York at Buffalo
State University of New York at Stony Brook
State University of New York Health Science Center at Brooklyn
State University of New York Health Science Center at Syracuse
Stetson University
Stevens Institute of Technology
*Syracuse University
*Temple University
Tennessee State University
Tennessee Technological University
*Texas A & M University
Texas Christian University
Texas Southern University
Texas Tech University
Texas Woman's University
Thomas Jefferson University
Towson State University
Trinity University
Tufts University
*Tulane University
University of Akron
*University of Alabama
University of Alabama at Birmingham
University of Alabama in Huntsville
University of Alaska, Fairbanks
*University of Arizona
University of Arkansas
University of Arkansas at Little Rock
University of Bridgeport
University of British Columbia
*University of California, Berkeley
University of California, Davis
University of California, Irvine
University of California, Los Angeles
University of California, Riverside
University of California, San Diego
University of California, San Francisco
University of California, Santa Barbara
University of California, Santa Cruz
University of Central Florida

*University of Chicago
University of Cincinnati
University of Colorado at Denver
*University of Colorado, Boulder
University of Connecticut
University of Dayton
*University of Delaware
*University of Denver
University of the District of Columbia
*University of Florida
University of Georgia
University of Hartford
University of Hawaii at Manoa
University of Health Sciences, The Chicago Medical School
University of Houston-Clear Lake
University of Houston-University Park
University of Idaho
University of Illinois at Chicago
*University of Illinois at Urbana-Champaign
*University of Iowa
*University of Kansas
*University of Kentucky
University of Louisville
University of Lowell
University of Maine
University of Maryland Graduate School, Baltimore
University of Maryland Graduate School, College Park
University of Maryland Graduate School, Eastern Shore
University of Maryland University College, Graduate School
University of Massachusetts at Amherst
University of Massachusetts at Boston
University of Medicine & Dentistry of New Jersey
University of Miami
*University of Michigan
University of Minnesota
University of Mississippi
University of Missouri, Columbia
University of Missouri, Kansas City
University of Missouri-Rolla
University of Missouri-St. Louis
University of Montana
*University of Nebraska at Omaha
University of Nebraska-Lincoln
University of Nebraska Medical Center
University of Nevada-Las Vegas
University of Nevada-Reno
University of New Hampshire
University of New Haven
University of New Mexico
University of New Orleans
*University of North Carolina at Chapel Hill
University of North Carolina at Charlotte
University of North Carolina at Greensboro
University of North Carolina at Wilmington
*University of North Dakota
University of North Texas
University of Northern Colorado
University of Northern Iowa
*University of Notre Dame
*University of Oklahoma
*University of Oregon
University of Ottawa
University of the Pacific
*University of Pennsylvania
*University of Pittsburgh
University of Puerto Rico, Mayaguez Campus
University of Puerto Rico, Rio Piedras
University of Rhode Island
*University of Rochester
University of San Diego
University of Scranton
University of South Alabama
*University of South Carolina
University of South Florida
University of Southern California
*University of Southern Maine
*University of Southern Mississippi
University of Southwestern Louisiana
University of Tennessee at Chattanooga
University of Tennessee at Knoxville

University of Tennessee at Martin
University of Tennessee, Memphis Center for the Health Sciences
University of Texas at Arlington
University of Texas at Austin
University of Texas at Dallas
University of Texas at El Paso
University of Texas at San Antonio
University of Texas Graduate School of Biomedical Science at Galveston
University of Texas Graduate School of Biomedical Science at Houston
University of Texas Graduate School of Biomedical Science at San Antonio
University of Toledo
University of Toronto
University of Tulsa
*University of Utah
University of Vermont
*University of Virginia
*University of Washington
University of Wisconsin-Eau Claire
*University of Wisconsin-Madison
University of Wisconsin-Milwaukee
University of Wisconsin-Oshkosh
University of Wisconsin-Stout
*University of Wyoming
Utah State University
*Vanderbilt University
Villanova University
Virginia Commonwealth University
*Virginia Polytechnic Institute and State University
Wake Forest University
*Washington State University
Washington University
*Wayne State College
Wayne State University
Wesleyan University
West Chester University
*West Virginia University
Western Carolina University
Western Illinois University
Western Kentucky University
Western Michigan University
Western Washington University
Westfield State College
Wichita State University
Widener University
Worcester Polytechnic Institute
Wright State University
Xavier University
*Yale University
Yeshiva University
Youngstown State University

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